GA-8I955X Royal/ GA-8I955X Pro

Intel[®] Pentium[®] Processor Extreme Edition Intel[®] Pentium[®] D / Pentium[®] 4 LGA775 Processor Motherboard

User's Manual

Rev. 1003 12ME-8I955XRO-1003

	Name : Timmy Huang	Date : April 18, 2005	(Stamp)
Date: April 18, 2005	Signature: <i>Finnny Huang</i>	Manufacturer/Importer	
Signature: Eric Lu	General and Satety requirements for uninterruptible power systems (UPS)	Safety of household and similar electrical appliances	EN 60335 Safety electric
Representative Person's Name: ERIC LU	including electrical business equipment	electronic and related apparatus for household and similar general use	
including that may cause undesired operation.	ve mentioned product se with LVD 73/23 EEC Safety for information technology equipment	es the c y stand	T EN ROORS
subject to the following two conditions: (1) This device may not	(EC conformity marking)		⊠ CE marking
This device complies with part 15 of the FCC Rules. Operation is		DIN VDE 0855 Cabled distribution systems; Equipment part 10 for receiving and/or distribution from part 12 sound and television signals	DIN VDE 0855 Cabled part 10 for rece part 12 sound a
(a),Class B Digital Device		Limits and methods of measurement of radio disturbance characteristics of information technology equipment	EN 55022 Limits a of radio informa
FCC Part 15, Subpart B, Section 15.107(a) and Section 15.109	EMC requirements for uninterruptible power systems (UPS)	Immunity from radio interference of EN 50091- 2 broadcast receivers and associated equipment	EN 55020 Immunity f broadcast equipment
Model Number: GA-81955X Royal Conforms to the following specifications:	Immunity requirements for household appliances tools and similar apparatus	Limits and methods of measurement of radio disturbance characteristics of fluorescent lamps and luminaries	EN 55015 Limits a of radio fluoresc
Product Name: Motherboard	Generic immunity standard Part 2: Industrial environment	apparatus and similar electrical EN 50082-2	portable to apparatus
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City of Industry, CA 91748 Phone/Fax No: (818) 854-9338/ (818) 854-9339	Information Technology equipmert-immunity charadensitiseUmits and methods of measurement	Limits and methods of measurement IS EN 55024 of radio Gisturbance characteristics of broadcast receivers and associated equipment	EN 55013 Limits and of radio dis broadcast equipment
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	o which it refers)	(description of the apparatus, system, installation to which it refers) Motherboard	
Per FCC Part 2 Section 2.1077(a)	Germany	G.B.T. Technology Trading GMbH Ausschlager Weg 41, 17 20537 Hamburg, Germany declars that the product	
DECLARATION OF CONFORMITY	nity	Declaration of Conformity We. Manufacturer/Importer (full address)	

	Name :Tīmmy Huang	Date: May 0, 2000		(Stamp)
		May 6 2005		
Date: May 6, 2005	Signature: Timmy Huang	Manufacturer/Importer		
Signature: <u>Eric Lu</u>	General and Safety requirements for uninterruptible power systems (UPS)	🗆 EN 50091-1	Safety of household and similar electrical appliances	□ EN 60335
Representative Person's Name: ERIC LU	Satety for information technology equipment including electrical business equipment	se L EN 60950	Satety requirements for mains operated electronic and related apparatus for household and similar general use	L EN 60065
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Product Manual Classification

In order to assist in the use of this product, Gigabyte has categorized the user manual in the following:

- For quick installation, please refer to the "Hardware Installation Guide" included with the product.
- For detailed product information and specifications, please carefully read the "Product User Manual".
- For detailed information related to Gigabyte's unique features, please go to "Technology Guide" section on Gigabyte's website to read or download the information you need.

For more product details, please click onto Gigabyte's website at www.gigabyte.com.tw

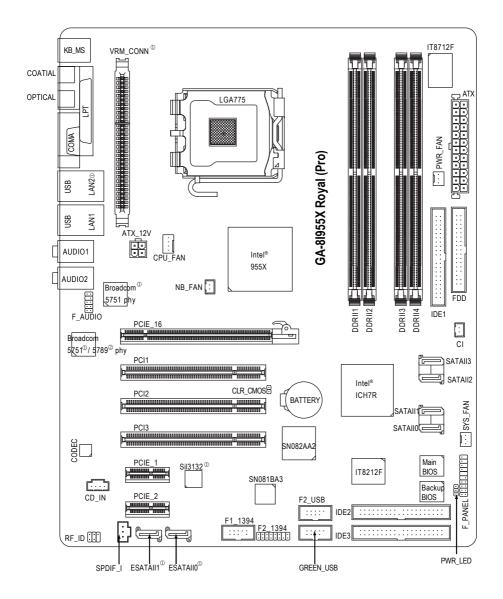
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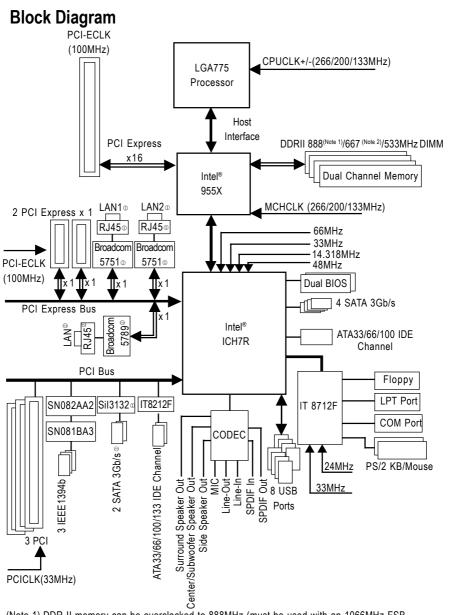
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GA-8I955X Royal/GA-8I955X Pro Motherboard Layout



2 Only for GA-8I955X Pro.



- (Note 1) DDR II memory can be overclocked to 888MHz (must be used with an 1066MHz FSB processor) through overclocking in BIOS. Go to GIGABYTE's website for more information about the supported DDR II memory modules for this feature.
- (Note 2) To use a DDR II 667 memory module on the motherboard, you must install an 800/1066MHz FSB processor.
- ① Only for GA-8I955X Royal.
 ② Only for GA-8I955X Pro.

Chapter 1 Hardware Installation

1-1 Considerations Prior to Installation

Preparing Your Computer

The motherboard contains numerous delicate electronic circuits and components which can become damaged as a result of electrostatic discharge (ESD). Thus, prior to installation, please follow the instructions below:

- 1. Please turn off the computer and unplug its power cord.
- 2. When handling the motherboard, avoid touching any metal leads or connectors.
- It is best to wear an electrostatic discharge (ESD) cuff when handling electronic components (CPU, RAM).
- 4. Prior to installing the electronic components, please have these items on top of an antistatic pad or within a electrostatic shielding container.
- Please verify that the power supply is switched off before unplugging the power supply connector from the motherboard.

Installation Notices

- 1. Prior to installation, please do not remove the stickers on the motherboard. These stickers are required for warranty validation.
- 2. Prior to the installation of the motherboard or any hardware, please first carefully read the information in the provided manual.
- 3. Before using the product, please verify that all cables and power connectors are connected.
- 4. To prevent damage to the motherboard, please do not allow screws to come in contact with the motherboard circuit or its components.
- 5. Please make sure there are no leftover screws or metal components placed on the motherboard or within the computer casing.
- 6. Please do not place the computer system on an uneven surface.
- 7. Turning on the computer power during the installation process can lead to damage to system components as well as physical harm to the user.
- 8. If you are uncertain about any installation steps or have a problem related to the use of the product, please consult a certified computer technician.

Instances of Non-Warranty

- 1. Damage due to natural disaster, accident or human cause.
- 2. Damage as a result of violating the conditions recommended in the user manual.
- 3. Damage due to improper installation.
- 4. Damage due to use of uncertified components.
- 5. Damage due to use exceeding the permitted parameters.
- 6. Product determined to be an unofficial Gigabyte product.

1-2 Feature Summary

Motherboard	GA-81955X Royal or GA-81955X Pro
CPU	 Supports LGA775 Intel[®] Pentium[®] Processor Extreme Edition/ Pentium[®] D
	Pentium® 4 (Note 1)
	 Supports 1066/800/533MHz FSB
	L2 cache varies with CPU
Chipset	 Northbridge: Intel[®] 955X Chipset
	 Southbridge: Intel[®] ICH7R
	 Supported on the Win 2000/XP operating systems
Memory	 4 DDR II DIMM memory slots (supports up to 8GB memory)^(Note 2)
	 Supports dual channel DDR II 888^{(Note 3)/} 667 ^(Note 4)/533/400 unbuffered DIMM
	 Supports 1.8V DDR II DIMM
	 Supports ECC/non-ECC type DRAM
Slots	 1 PCI Express x 16 slot
	 2 PCI Express x 1 slots
	3 PCI slots
IDE Connections	 1 port from ICH7R (IDE1) (UDMA 33/ATA 66/ATA 100), allows connection or
	2 IDE devices
	 Supported on the Win 2000/XP operating systems
	• 2 port from IT8212F (IDE2/IDE3)(UDMA 33/ATA 66/ATA 100/ATA 133),
	allows connection of 4 IDE devices
FDD Connections	 1 FDD connection, allows connection of 2 FDD devices
Onboard SATA 3Gb/s	
	- Supported on the Win 2000/XP operating systems
	 2 ports from Sil3132 controller (ESATAII0, ESATAII1)[∞]
	- Supported on the Win 2000/XP/Server 2003 operating systems
Peripherals	 1 parallel port supporting Normal/EPP/ECP mode
i onpriorato	 1 Serial port (COMA)
	 8 USB 2.0/1.1 ports (rear x 4, front x 4 via cable)
	 1 front audio connector
	 3 IEEE1394b ports (requires cable)
	 1 PS/2 keyboard port
	 1 PS/2 mouse port
Onboard Audio	 ALC882M®/ALC882 ©CODEC (UAJ)
	Supports Jack Sensing function
	 Supports Jack Sensing function Supports 2 / 4 / 6 / 8 channel audio
	Supporte Ente in , Ente out (Front opeaner out) , inte , ourround opeaner
	Out (Rear Speaker Out) ; Center/Subwoofer Speaker Out ; Side Speaker
	Out connection

(Note 1) For further CPU support information, please go to GIGABYTE's website.

(Note 2) Due to standard PC architecture, a certain amount of memory is reserved for system usage and therefore the actual memory size is less than the stated amount. For example, 8 GB of memory size will instead be shown as 7.xxGB memory during system startup.

(Note 3) DDR II memory can be overclocked to 888MHz (must be used with an 1066MHz FSB processor) through overclocking in BIOS. Go to GIGABYTE's website for more information about the supported DDR II memory modules for this feature.

(Note 4) To use a DDR II 667 memory module on the motherboard, you must install an 800/1066MHz FSB processor.

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Onboard Audio	SPDIF In connection
	SPDIF In connection SPDIF Out connection (coaxial+optical)
	CD In connection
	 Supported on the Win 2000/XP operating systems
Onboard LAN	 Onboard Broadcom 5751 chip (10/100/1000 Mbit) (LAN1/LAN2)[®]
	 Onboard Broadcom 5759 chip (10/100/1000 Mbit) (EAU/22/2000) Onboard Broadcom 5789 chip (10/100/1000 Mbit)[®]
	 2 RJ45 ports
	 Supported on the Win 2000/XP operating systems
I/O Control	Supported on the win 2000/Ar operating systems IT8712F
Hardware Monitor	System voltage detection
	CPU temperature detection
	CPU / System / Power fan speed detection
	 CPU warning temperature
	CPU / System/ Power fan failure warning
	 CPU smart fan control
Onboard IDE RAID	Onboard GigaRAID IT8212F chip
	 supports data striping (RAID 0) or mirroring (RAID 1) or striping +
	mirroring (RAID 0+1) function
	- supports JBOD function
	 supports obcorrent dual ATA133 IDE controller operation
	- support ATAPI mode for HDD
	- supports IDE bus master operation
	- support ATA133/RAID mode switch by BIOS
	 support ATATSTRAID mode switch by BIOS displays status and error checking messages during boot-up
	 Features LBA and Extended Interrupt 13 drive translation in controller onboard BIOS
Onboard SATA 3Gb/s	Onboard Intel [®] ICH7R chipset
RAID	- supports data striping (RAID 0), mirroring (RAID 1), striping + mirroring
	(RAID 0+1), or RAID 5
	- supports data transfer rate of up to 300 MB/s
	 supports hot plugging function (only for AHCI mode)
	- supports a maximum of 4 SATA 3Gb/s connections
	 supported on the Win 2000/XP operating systems
	 Onboard Sil3132 chip[⊕]
	- supports data striping (RAID 0) or mirroring (RAID 1)
	- supports data transfer rate of up to 300 MB/s
	- supports hot plugging function
	- supports a maximum of 2 SATA 3Gb/s connections
	- supported on the Win 2000/XP/Server 2003 operating systems
BIOS	Use of licensed AWARD BIOS
	 Supports Dual BIOS/Q-Flash/Multilanguage BIOS
Additional Features	Supports U-Plus DPS [®]
	 Supports @BIOS
	 Supports EasyTune 5 (Note 5)
Overclocking	Over Voltage via BIOS (FSB/DDR II/PCIE/CPU)
2	 Over Clock via BIOS (CPU/DDR II /PCIE)
Form Factor	ATX form factor; 30.5cm x 24.4cm
	functions may vary depending on different motherboards.

① Only for GA-8I955X Royal.

1-3 Installation of the CPU and Heatsink



Before installing the CPU, please comply with the following conditions:

- 1. Please make sure that the motherboard supports the CPU.
- Please take note of the one indented corner of the CPU. If you install the CPU in the wrong direction, the CPU will not insert properly. If this occurs, please change the insert direction of the CPU.
- 3. Please add an even layer of heat sink paste between the CPU and heatsink.
- 4. Please make sure the heatsink is installed on the CPU prior to system use, otherwise overheating and permanent damage of the CPU may occur.
- 5. Please set the CPU host frequency in accordance with the processor specifications. It is not recommended that the system bus frequency be set beyond hardware specifications since it does not meet the required standards for the peripherals. If you wish to set the frequency beyond the proper specifications, please do so according to your hardware specifications including the CPU, graphics card, memory, hard drive, etc.



HT functionality requirement content :

Enabling the functionality of Hyper-Threading Technology for your computer system requires all of the following platform components:

- CPU: An Intel® Pentium 4 Processor with HT Technology
- Chipset: An Intel® Chipset that supports HT Technology
- BIOS: A BIOS that supports HT Technology and has it enabled
- OS: An operation system that has optimizations for HT Technology

1-3-1 Installation of the CPU

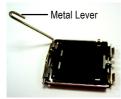


Fig. 1 Gently lift the metal lever located on the CPU socket to the upright position.



Fig. 2 Remove the plastic covering on the CPU socket.

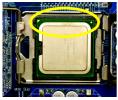


Fig. 3 Notice the small gold colored triangle located on the edge of the CPU socket. Align the indented corner of the

CPU with the triangle and gently insert the CPU into position. (Grasping the CPU firmly between your thumb and forefinger, carefully place it into the socket in a straight and downwards motion. Avoid twisting or bending motions that might cause damage to the CPU during installation.)



Fig. 4 Once the CPU is properly inserted, please replace the load plate and push the metal lever back into its original position.

1-3-2 Installation of the Heatsink



Fig.1

Please apply an even layer of heatsink paste on the surface of the installed CPU.

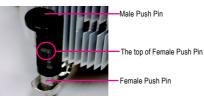


Fig. 2

(Turning the push pin along the direction of arrow is to remove the heatsink, on the contrary, is to install.) Please note the direction of arrow sign on the male push pin doesn't face inwards before installation. (This instruction is only for Intel boxed fan)



Fig. 3

Place the heatsink atop the CPU and make sure the push pins aim to the pin hole on the motherboard.Pressing down the push pins diagonally.

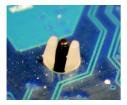


Fig. 5

Please check the back of motherboard after installing. If the push pin is inserted as the picture, the installation is complete.



Fig. 4

Please make sure the Male and Female push pin are joined closely. (for detailed installation instructions, please refer to the heatsink installation section of the user manual)



Fig. 6

Finally, please attach the power connector of the heatsink to the CPU fan header located on the motherboard.



The heatsink may adhere to the CPU as a result of hardening of the heatsink paste. To prevent such an occurrence, it is suggested that either thermal tape rather than heat sink paste be used for heat dissipation or using extreme care when removing the heatsink.

1-4 Installing/Removing Cool-Plus (Northbridge Cooling Fan)



Fig.1

To attach Cool-Plus to a heatsink, align the extensions on both sides with the grooves in the heatsink as shown. Firmly press down until it snaps into position.



Fig.2

Once the fan is properly affixed onto the heatsink, plug the power cable into the NB_FAN connector.



Fig.3

Before proceeding, first check to make sure that the fan's power cable is disconnected. Then, while applying pressure to the top of the fan, carefully use a screwdriver to dislodge the extension on one side.

Exerting too much pressure on the fan during removal might cause the side extensions to break-off.

1-5 Installation of Memory



Before installing the memory modules, please comply with the following conditions:

- Please make sure that the memory used is supported by the motherboard. It is recommended that memory of similar capacity, specifications and brand be used.
- Before installing or removing memory modules, please make sure that the computer power is switched off to prevent hardware damage.
- 3. Memory modules have a foolproof insertion design. A memory module can be installed in only one direction. If you are unable to insert the module, please switch the direction.

The motherboard supports DDR II memory modules, whereby BIOS will automatically detect memory capacity and specifications. Memory modules are designed so that they can be inserted only in one direction. The memory capacity used can differ with each slot.

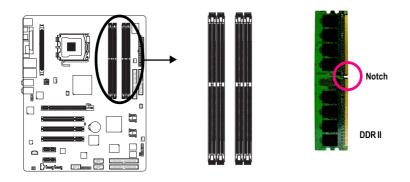






Fig.1

The DIMM socket has a notch, so the DIMM memory module can only fit in one direction. Insert the DIMM memory module vertically into the DIMM socket. Then push it down.

Fig.2

Close the plastic clip at both edges of the DIMM sockets to lock the DIMM module.

Reverse the installation steps when you wish to remove the DIMM module.



Dual Channel DDR II

GA-81955X Royal/Pro supports the Dual Channel Technology. After operating the Dual Channel Technology, the bandwidth of Memory Bus will double.

If you want to operate the Dual Channel Technology, please note the following explanations due to the limitation of Intel chipset specifications.

- 1. Dual channel memory cannot be used if one or three DDR II memory modules are installed.
- 2. To enable Dual Channel mode with 2 or 4 memory modules, it is recommended to use memory modules of identical brand, size, chips, and speed.

We'll strongly recommend our user to slot two DDR II memory modules into the DIMMs of the same color in order for Dual Channel Technology to work.

The following table is for Dual Channel Technology combination: (DS: Double Side, SS: Single Side)

				-
	DDR II 1	DDR II 2	DDR II 3	DDR II 4
2 memory modules	DS/SS	X	DS/SS	Х
	Х	DS/SS	Х	DS/SS
4 memory modules	DS/SS	DS/SS	DS/SS	DS/SS

1-6 Installation of Expansion Cards

You can install your expansion card by following the steps outlined below:

- 1. Read the related expansion card's instruction document before install the expansion card into the computer.
- 2. Remove your computer's chassis cover, screws and slot bracket from the computer.
- 3. Press the expansion card firmly into expansion slot in motherboard.
- 4. Be sure the metal contacts on the card are indeed seated in the slot.
- 5. Replace the screw to secure the slot bracket of the expansion card.
- 6. Replace your computer's chassis cover.
- 7. Power on the computer, if necessary, setup BIOS utility of expansion card from BIOS.
- 8. Install related driver from the operating system.

Installing a PCI Express x 16 expansion card:





Please align the VGA card to the onboard PCI Express x 16 slot and press firmly down on the slot. Make sure your VGA card is locked by the latch at the end of the PCI Express x 16 slot. When you try uninstall the VGA card, please gently press the latch as the picture to the left shows to release the card.

1-7 Installation of U-Plus DPS (Universal Plus Dual Power System)^o

The U-Plus Dual Power System (U-Plus D.P.S.) is a revolutionary eight-phase power circuit built for ultimate system protection. Designed to withstand varying current levels and changes, the U-Plus DPS provides an immensely durable and stable power circuit to the CPU for solid system stability. These characteristics make it the ideal companion with the latest LGA775 Intel[®] Pentium[®] 4 Processor as well as future Intel[®] processors. As well, 4 blue LED's are mounted on the U-Plus D.P.S. for intelligent indication of system loading.

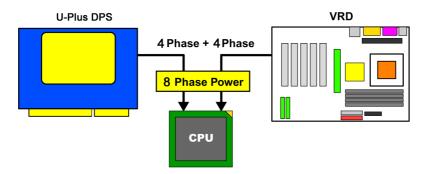


The U-Plus DPS can work in a Dual Power System: Parallel Mode--

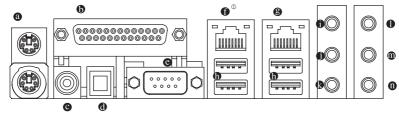
U-Plus DPS and motherboard CPU power can work simultaneously, providing a total of 8-phase power circuit.

How to install U-Plus DPS?

- 1. The U-Plus DPS socket (VRM_CONN) has a notch, so the U-Plus DPS can only fit in one direction.
- 2. Insert the U-Plus DPS vertically into the socket and then push it down.
- 3. Fix the U-Plus DPS on the motherbard with the clip.
- 4. Reverse the installation steps if you want to remove the U-Plus DPS.



1-8 I/O Back Panel Introduction



PS/2 Keyboard and PS/2 Mouse Connector

To install a PS/2 port keyboard and mouse, plug the mouse to the upper port (green) and the keyboard to the lower port (purple).

Parallel Port

The parallel port allows connection of a printer, scanner and other peripheral devices.

COATIAL (SPDIF_O)

The SPDIF coaxial output port is capable of providing digital audio to external speakers or compressed AC3 data to an external Dolby Digital Decoder via a coaxial cable.

OPTICAL (SPDIF_O)

The SPDIF optical output port is capable of providing digital audio to external speakers or compressed AC3 data to an external Dolby Digital Decoder via an optical cable.

COMA (Serial Port)

Connects to serial-based mouse or data processing devices.

LAN Port 20/ LAN Port 1

The provided Internet connection is Gigabit Ethernet (PCI Express Gigabit), providing data transfer speeds of 10/100/1000Mbps.

USB port

Before you connect your device(s) into USB connector(s), please make sure your device(s) such as USB keyboard, mouse, scanner, zip, speaker...etc. have a standard USB interface. Also make sureyour OS supports USB controller. If your OS does not support USB controller, please contact OS vendor for possible patch or driver upgrade. For more information please contact your OS or device(s) vendors.

Line In

The default Line In jack. Devices like CD-ROM, walkman etc. can be connected to Line In jack.

Line Out (Front Speaker Out)

The default Line Out (Front Speaker Out) jack. Stereo speakers, earphone or front surround speakers can be connected to Line Out (Front Speaker Out) jack .

MIC In

The default MIC In jack. Microphone must be connected to MIC In jack.

• Surround Speaker Out (Rear Speaker Out)

The default Surround Speaker Out (Rear Speaker Out) jack. Rear surround speakers can be connected to Surround Speaker Out (Rear Speaker Out) jack.

① Only for GA-8I955X Royal.

Center/Subwoofer Speaker Out

The default Center/Subwoofer Speaker Out jack. Center/Subwoofer speakers can be connected to Center/Subwoofer Speaker Out jack.

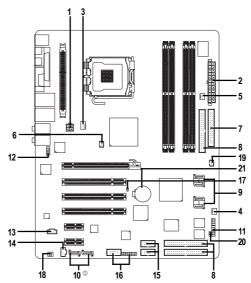
Side Speaker Out

NOTE

The default Side Speaker Out jack. Surround side speakers can be connected to Side Speaker Out jack.

In addition to the default speakers settings, the • • • audio jacks can be reconfigured to perform different functions via the audio software. Only microphones still MUST be connected to the default Mic In jack (•). Please refer to the 2-/4-/6-/8- channel audio setup steps for detailed software configuration information.

1-9 Connectors Introduction



1)	ATX_12V	12) F_AUDIO
2)	ATX (Power Connector)	13) CD_IN
3)	CPU_FAN	14) SPDIF_I
4)	SYS_FAN	15) F_USB2/GREEN_USB
5)	PWR_FAN	16) F1_1394 / F2_1394
6)	NB_FAN	17) CLR_CMOS
7)	FDD	18) RF_ID
8)	IDE1/IDE2/IDE3	19) CI
9)	SATAII0/SATAII1/SATAII2/SATAII3	20) PWR_LED
10)	ESATAII0/ESATAII1 [®]	21) BAT
11)	F_PANEL	

① Only for GA-8I955X Royal.

1/2) ATX_12V/ATX (Power Connector)

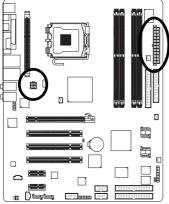
With the use of the power connector, the power supply can supply enough stable power to all the components on the motherboard. Before connecting the power connector, please make sure that all components and devices are properly installed. Align the power connector with its proper location on the motherboard and connect tightly.

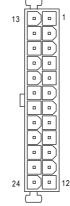
The ATX_12V power connector mainly supplies power to the CPU. If the ATX_12V power connector is not connected, the system will not start.

Caution!

Please use a power supply that is able to handle the system voltage requirements. It is recommended that a power supply that can withstand high power consumption be used (300W or greater). If a power supply is used that does not provide the required power, the result can lead to an unstable system or a system that is unable to start.

If you use a 24-pin ATX power supply, please remove the small cover on the power connector on the motherboard before plugging in the power cord ; otherwise, please do not remove it.





Pin No.	Definition
1	GND
2	GND
3	+12V
4	+12V

Pin No.	Definition
1	3.3V
2	3.3V
3	GND
4	+5V
5	GND
6	+5V
7	GND
8	Power Good
9	5V SB(stand by +5V)
10	+12V
11	+12V
12	3.3V
	(Only for 24pins ATX)
13	3.3V
14	-12V
15	GND
16	PS_ON(soft On/Off)
17	GND
18	GND
19	GND
20	-5V
21	+5V
22	+5V
23	+5V
24	GND

3/4/5) CPU_FAN / SYS_FAN/ PWR_FAN (Cooler Fan Power Connector)

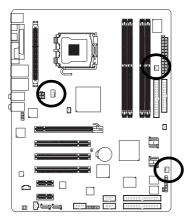
The cooler fan power connector supplies a +12V power voltage via a 3-pin/4-pin (only for CPU_FAN) power connector and possesses a foolproof connection design.

Most coolers are designed with color-coded power connector wires. A red power connector wire indicates a positive connection and requires a +12V power voltage. The black connector wire is the ground wire (GND).

Please remember to connect the power to the cooler to prevent system overheating and failure. Caution!

Please remember to connect the power to the CPU fan to prevent CPU overheating and failure.

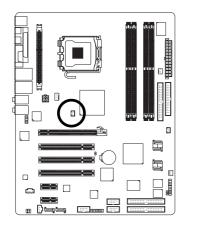
PWR FAN



•		
	Pin No.	Definition
- 4 1	1	GND
CPU_FAN	2	+12V
1 6 •	3	Sense
1:	4	Speed Control
SYS_FAN		(Only for CPU_FAN)
1		

6) NB FAN (Chip Fan Power Connector)

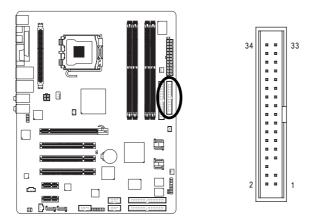
If you installed wrong direction, the chip fan will not work. Sometimes will damage the chip fan. (Usually black cable is GND)



Pin No.	Definition
1	+12V
2	GND

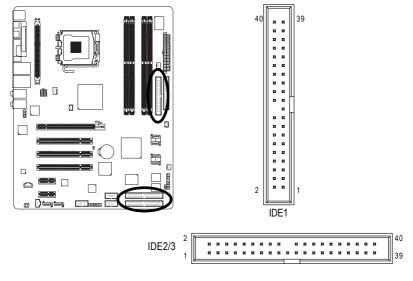
7) FDD (Floppy Connector)

The FDD connector is used to connect the FDD cable while the other end of the cable connects to the FDD drive. The types of FDD drives supported are: 360KB, 720KB, 1.2MB, 1.44MB and 2.88MB. Please connect the red power connector wire to the pin1 position.



8) IDE1/IDE2/IDE3 (IDE Connector)

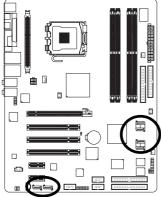
An IDE device connects to the computer via an IDE connector. One IDE connector can connect to one IDE cable, and the single IDE cable can then connect to two IDE devices (hard drive or optical drive). If you wish to connect two IDE devices, please set the jumper on one IDE device as Master and the other as Slave (for information on settings, please refer to the instructions located on the IDE device).



9) SATAII0/1/2/3 (SATA 3Gb/s Connectors, Controlled by ICH7R)

10) ESATAII0/1 (SATA 3Gb/s Connectors, Controlled by Sil3132)[©]

SATA 3Gb/s can provide up to 300MB/s transfer rate. Please refer to the BIOS setting for the SATA 3Gb/s and install the proper driver in order to work properly.



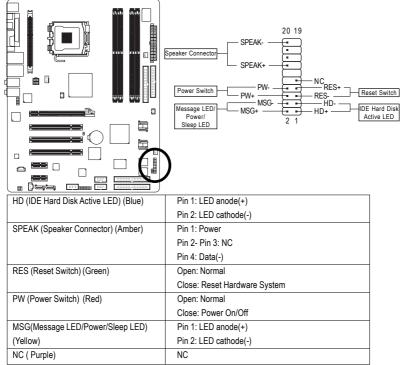
7
چئ (controlled by ICH7R)
(controlled by Sil3132)

Pin No.	Definition
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND

① Only for GA-8I955X Royal.

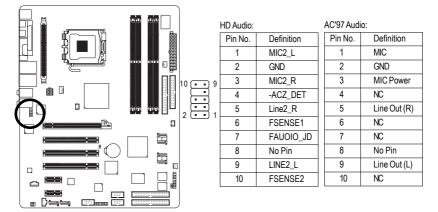
11) F_PANEL (Front Panel Jumper)

Please connect the power LED, PC speaker, reset switch and power switch etc of your chassis front panel to the F_PANEL connector according to the pin assignment below.



12) F_AUDIO (Front Audio Connector)

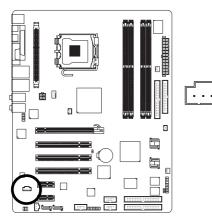
This connector supports either HD (High Definition) or AC97 front panel audio module. If you wish to use the front audio function, connect the front panel audio module to this connector. Check the pin assignments carefully while you connect the front panel audio module. Incorrect connection between the module and connector will make the audio device unable to work or even damage it. For optional front panel audio module, please contact your chassis manufacturer.



By default, the audio driver is configured to support HD Audio. To connect an AC97 front panel audio module to this connector, please refer to the instructions on Page 81 about the software settings.

13) CD_IN (CD IN)

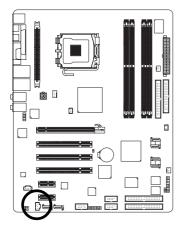
Connect CD-ROM or DVD-ROM audio out to the connector.



Pin No.	Definition
1	CD-L
2	GND
3	GND
4	CD-R

14) SPDIF_I (SPDIF In)

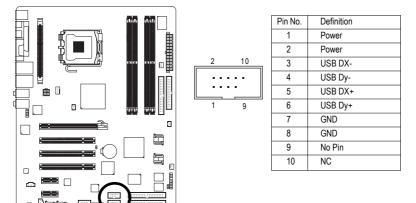
Use SPDIF IN feature only when your device has digital output function. Be careful with the polarity of the SPDIF_IN connector. Check the pin assignment carefully while you connect the SPDIF cable, incorrect connection between the cable and connector will make the device unable to work or even damage it. For optional SPDIF cable, please contact your local dealer.



Pin No.	Definition
1	Power
2	SPDIFI
3	GND

15) F_USB2/GREEN_ USB (Front USB Connector)

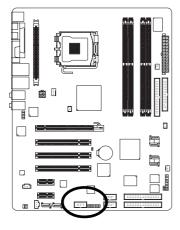
Be careful with the polarity of the front USB connector. Check the pin assignments carefully while you connect the front USB cable, incorrect connection between the cable and connector will make the device unable to work or even damage it. For optional front USB cable, please contact your local dealer. The GREEN_USB connector provides no standby power when system is off and it does not support USB device to wake up from S3 mode. Users who wish to shut down the standby power^(note) for their USB devices during system power-off can connect the devices to this connector via the optional front USB cable.



(Note) When the standby power is shut down, USB devices (example: optical mouses) will not light on during system power-off.

16) F1_1394/F2_1394 (IEEE 1394 Connectors)

Serial interface standard set by Institute of Electrical and Electronics Engineers, which has features like high speed, highbandwidth and hot plug. Be careful with the polarity of the IEEE1394 connector. Check the pin assignment carefully while you connect the IEEE1394 cable, incorrect connection between the cable and connector will make the device unable to work or even damage it. For optional IEEE1394 cable, please contact your local dealer. IEEE1394b can approach the maximum speed to 800Mb/S, but the speed can be achieved only when you use particular IEEE1394b cable.



F1.	_1394 2 1	•••••10 ••••9
	Pin No.	Definition
	1	TPA0+
	2	TPA0-
	3	GND
	4	GND
	5	TPB0+
	6	TPB0-
	7	No Pin
	8	Power
	9	Power
	10	GND

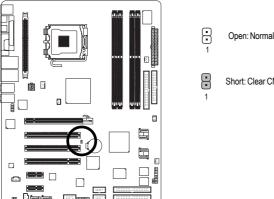
1	15
Pin No.	Definition
1	Power
2	Power
3	TPA1+
4	TPA1-
5	GND
6	GND
7	TPB1+
8	TPB1-
9	Power
10	Power
11	TPA2+
12	TPA2-
13	GND
14	No Pin
15	TPB2+
16	TPB2-
	Pin No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

F2 1394 ••••••

16

17) CLR_CMOS (Clear CMOS)

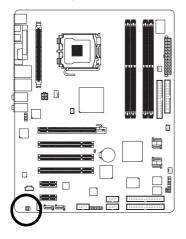
You may clear the CMOS data to its default values by this header. To clear CMOS, temporarily short 1-2 pin. Default doesn't include the jumper to prevent from improper use of this header.



Short: Clear CMOS

18) RF_ID

This connector allows you to connect external devices to use extra function. Check the pin assignments before you connect the external device cable. Please contact your nearest dealer for the optional GIGABYTE external device.

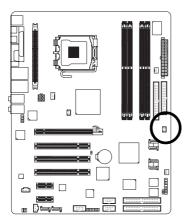


	F	F	n	
1	•	•		
	-	\sim	\sim	

Pin No.	Definition
1	Power
2	RFID_RI-
3	RF_TXD
4	RF_RXD
5	NC
6	GND

19) CI (Chassis Intrusion, Case Open)

This 2-pin connector allows your system to detect if the chassis cover is removed. You can check the "Case Open" status in BIOS Setup.

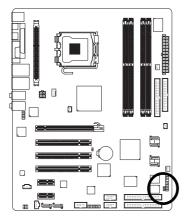


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Pin No.	Definition
1	Signal
2	GND

20) PWR_LED

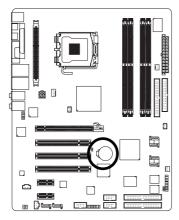
PWR_LED is connected with the system power indicator to indicate whether the system is on/off. It will blink when the system enters suspend mode.

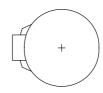


·
Ō
1

Pin No.	Definition	
1	MPD+	
2	MPD-	
3	MPD-	

21) BAT(Battery)





- Danger of explosion if battery is incorrectly replaced.
- Replace only with the same or equivalent type recommended by the manufacturer.
- Dispose of used batteries according to the manufacturer's instructions.

If you want to erase CMOS ...

1. Turn OFF the computer and unplug the power cord.

 Take out the battery gently and put it aside for about 10 minutes. (Or you can use a metal object to connect the positive and negative pins in the battery holder to makethem short for one minute.)

3. Re-install the battery.

4. Plug the power cord and turn ON the computer.

Chapter 2 BIOS Setup

BIOS (Basic Input and Output System) includes a CMOS SETUP utility which allows user to configure required settings or to activate certain system features.

The CMOS SETUP saves the configuration in the CMOS SRAM of the motherboard.

When the power is turned off, the battery on the motherboard supplies the necessary power to the CMOS SRAM.

When the power is turned on, pushing the button during the BIOS POST (Power-On Self Test) will take you to the CMOS SETUP screen. You can enter the BIOS setup screen by pressing "Ctrl + F1".

When setting up BIOS for the first time, it is recommended that you save the current BIOS to a disk in the event that BIOS needs to be reset to its original settings. If you wish to upgrade to a new BIOS, either GIGABYTE's Q-Flash or @BIOS utility can be used.

Q-Flash allows the user to quickly and easily update or backup BIOS without entering the operating system. @BIOS is a Windows-based utility that does not require users to boot to DOS before upgrading BIOS but directly download and update BIOS from the Internet.

$<\uparrow><\downarrow><\leftarrow><$	\rightarrow > Move to select item	
<enter></enter>	Select Item	
<esc></esc>	Main Menu - Quit and not save changes into CMOS Status Page Setup Menu	
	and Option Page Setup Menu - Exit current page and return to Main Menu	
<page up=""></page>	Increase the numeric value or make changes	
<page down=""></page>	Decrease the numeric value or make changes	
<f1></f1>	General help, only for Status Page Setup Menu and Option Page Setup Menu	
<f2></f2>	Item Help	
<f3></f3>	Select Language	
<f5></f5>	Restore the previous CMOS value from CMOS, only for Option Page Setup	
	Menu	
<f6></f6>	Load the file-safe default CMOS value from BIOS default table	
<f7></f7>	Load the Optimized Defaults	
<f8></f8>	Dual BIOS/Q-Flash utility	
<f9></f9>	System Information	
<f10></f10>	Save all the CMOS changes, only for Main Menu	

CONTROL KEYS

Main Menu

The on-line description of the highlighted setup function is displayed at the bottom of the screen.

Status Page Setup Menu / Option Page Setup Menu

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc>.

The Main Menu (For example: BIOS Ver. : 8I955XRO.F3J)

Once you enter Award BIOS CMOS Setup Utility, the Main Menu (as figure below) will appear on the screen. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

CMOS Setup Utility-Copyright (C) 1984-2005 Award Software			
	 Standard CMOS Features 	Select Language	
	 Advanced BIOS Features 	Load Fail-Safe Defaults	
	 Integrated Peripherals 	Load Optimized Defaults	
	 Power Management Setup 	Set Supervisor Password	
	PnP/PCI Configurations	Set User Password	
	PC Health Status	Save & Exit Setup	
	MB Intelligent Tweaker(M.I.T.)	Exit Without Saving	
	ESC: Quit	F3: Change Language	
F8: Dual BIOS/Q-Flash		F10: Save & Exit Setup	
Time, Date, Hard Disk Type			



If you can't find the setting you want, please press "Ctrl+F1" to search the advanced option hidden. Please Load Optimized Defaults in the BIOS when somehow the system works not stable as usual. This action makes the system reset to the default for stability.

Standard CMOS Features

This setup page includes all the items in standard compatible BIOS.

Advanced BIOS Features

This setup page includes all the items of Award special enhanced features.

Integrated Peripherals

This setup page includes all onboard peripherals.

Power Management Setup

This setup page includes all the items of Green function features.

PnP/PCI Configuration

This setup page includes all the configurations of PCI & PnP ISA resources.

PC Health Status

This setup page is the System auto detect Temperature, voltage, fan, speed.

MB Intelligent Tweaker(M.I.T.)

This setup page is control CPU clock and frequency ratio.

Select Language

This setup page is to select multi languages.

Load Fail-Safe Defaults

Fail-Safe Defaults indicates the value of the system parameters which the system would be in safe configuration.

Load Optimized Defaults

Optimized Defaults indicates the value of the system parameters which the system would be in best performance configuration.

Set Supervisor Password

Change, set, or disable password. It allows you to limit access to the system and Setup, or just to Setup.

Set User Password

Change, set, or disable password. It allows you to limit access to the system.

Save & Exit Setup

Save CMOS value settings to CMOS and exit setup.

Exit Without Saving

Abandon all CMOS value changes and exit setup.

2-1 Standard CMOS Features

CMOS Setup Utility-Copyright (C) 1984-2005 Award Software Standard CMOS Features			
	Date (mm:dd:yy) Time (hh:mm:ss)	Wed, Oct 27 2004 22:31:24	Item Help Menu Level▶
	IDE Channel 0 Master IDE Channel 0 Slave	[None] [None]	Change the day, month, year
	Drive A Drive B Floppy 3 Mode Support	[1.44M, 3.5"] [None] [Disabled]	<week> Sun. to Sat.</week>
	Halt On	[All, But Keyboard]	<month> Jan. to Dec.</month>
	Base Memory Extended Memory Total Memory	640K 511M 512M	<day> 1 to 31 (or maximum allowed in the month)</day>
			<year> 1999 to 2098</year>
↑	↓→←: Move Enter: Select +/-/P F3: Language F5: Previous Valu	U/PD: Value F10: Save ues F6: Fail-Safe Defaults	ESC: Exit F1: General Help F7: Optimized Defaults

ு Date

The date format is <week>, <month>, <day>, <year>.

- ✤ Month The month, Jan. Through Dec.
- Day The day, from 1 to 31 (or the maximum allowed in the month)
- · Time

The times format in <hour> <minute> <second>. The time is calculated base on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00.

☞ IDE Channel 0 Master, Slave

- ▶ IDE HDD Auto-Detection Press "Enter" to select this option for automatic device detection.
- ▶ IDE Device Setup. You can use one of three methods:
 - Auto Allows BIOS to automatically detect IDE devices during POST(default)
 - None Select this if no IDE devices are used and the system will skip the automatic detection step and allow for faster system start up.
 - Manual User can manually input the correct settings.
- Access Mode Use this to set the access mode for the hard drive. The four options are: CHS/LBA/Large/Auto(default:Auto)

✤ Capacity Capacity of currently installed hard disk.

Hard drive information should be labeled on the outside drive casing. Enter the appropriate option based on this information.

- ► Cylinder Number of cylinders
- ➡ Head Number of heads
- ▶ Precomp Write precomp
- ▶ Landing Zone Landing zone
- ➡ Sector Number of sectors

If a hard disk has not been installed, select NONE and press <Enter>.

Drive A / Drive B

The category identifies the types of floppy disk drive A or drive B that has been installed in the computer.

- ► None No floppy drive installed.
- ➡ 360K, 5.25" 5.25 inch PC-type standard drive; 360K byte capacity.
- ▶ 1.2M, 5.25" 5.25 inch AT-type high-density drive; 1.2M byte capacity. (3.5 inch when 3 Mode is Enabled).
- ▶ 720K, 3.5" 3.5 inch double-sided drive; 720K byte capacity.
- > 1.44M, 3.5" 3.5 inch double-sided drive; 1.44M byte capacity.
- ▶ 2.88M, 3.5" 3.5 inch double-sided drive; 2.88M byte capacity.

☞ Floppy 3 Mode Support (for Japan Area)

- Disabled Normal Floppy Drive. (Default value)
- Drive A Drive A is 3 mode Floppy Drive.
- Drive B Drive B is 3 mode Floppy Drive.
- ➡ Both Drive A & B are 3 mode Floppy Drives.

・ Halt on

The category determines whether the computer will stop if an error is detected during power up.

No Errors	The system boot will not stop for any error that may be detected and you
	will be prompted.
All Errors	Whenever the BIOS detects a non-fatal error the system will be stopped.
All, But Keyboard	The system boot will not stop for a keyboard error; it will stop for all other errors. (Default value)
All, But Diskette	The system boot will not stop for a disk error; it will stop for all other errors.
➡ All, But Disk/Key	The system boot will not stop for a keyboard or disk error; it will stop for all
	other errors.

Memory

The category is display-only which is determined by POST (Power On Self Test) of the BIOS.

The POST of the BIOS will determine the amount of base (or conventional) memory installed in the system.

The value of the base memory is typically 512K for systems with 512K memory installed on the motherboard, or 640K for systems with 640K or more memory installed on the motherboard.

>> Extended Memory

The BIOS determines how much extended memory is present during the POST. This is the amount of memory located above 1 MB in the CPU's memory address map.

This item displays the memory size that used.

2-2 Advanced BIOS Features

CMOS Setup Utility-Copyright (C) 1984-2005 Award Software Advanced BIOS Features			
 Hard Disk Boot Priority First Boot Device Second Boot Device Third Boot Device Password Check CPU Hyper-Threading # Limit CPUID Max. to 3 No-Execute Memory Protect ^(Note) CPU Enhanced Halt (C1E) ^(Note) CPU Enhanced Halt (C1E) ^(Note) CPU Thermal Monitor 2(TM2) ^(Note) DRAM Data Integrity Mode 	[Press Enter] [Floppy] [Hard Disk] [CDROM] [Setup] [Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [Non-ECC]	Item Help Menu Level	
	+/-/PU/PD: Value F10: Save E s Values F6: Fail-Safe Defaults	ESC: Exit F1: General Help F7: Optimized Defaults	

NOTE

" # " System will detect automatically and show up when you install the Intel® Pentium® 4 processor with HT Technology.

Hard Disk Boot Priority

Select boot sequence for onboard(or add-on cards) SCSI, RAID, etc.

Use \uparrow or \downarrow to select a device, then press \leftrightarrow to move it up, or \leftarrow to move it down the list. Press <ESC> to exit this menu.

∽ First / Second / Third Boot Device

- ➡ Floppy Select your boot device priority by Floppy.
- ➡ LS120 Select your boot device priority by LS120.
- ➡ Hard Disk Select your boot device priority by Hard Disk.
- ➡ CDROM Select your boot device priority by CDROM.
- ➡ ZIP Select your boot device priority by ZIP.
- ➡ USB-FDD Select your boot device priority by USB-FDD.
- ► USB-ZIP Select your boot device priority by USB-ZIP.
- ➡ USB-CDROM Select your boot device priority by USB-CDROM.
- ➡ USB-HDD Select your boot device priority by USB-HDD.
- ► LAN Select your boot device priority by LAN.
- Disabled Disable this function.

Password Check

- Setup The system will boot but will not access to Setup page if the correct password is not entered at the prompt. (Default value)
- System
 The system will not boot and will not access to Setup page if the correct password is not entered at the prompt.

(Note) This item will show up when you install a processor that supports this function.

∽ CPU Hyper-Threading

Enabled	Enables CPU Hyper Threading Feature. Please note that this feature is only
	working for operating system with multi processors mode supported. (Default
	value)

✤ Disabled Disables CPU Hyper Threading.

∽ Limit CPUID Max. to 3

- ▶ Enabled Limit CPUID Maximum value to 3 when use older OS like NT4.
- Disabled
 Disables CPUID Limit for windows XP.(Default value)

∽ No-Execute Memory Protect^(Note)

- ➡ Enabled Enable No-Execute Memory Protect function.(Default value)
- Disabled Disable No-Execute Memory Protect function.

∽ CPU Enhanced Halt (C1E)^(Note)

- ✤ Enabled Enable CPU Enhanced Halt (C1E) function.(Default value)
- ➡ Disabled Disable CPU Enhanced Halt (C1E) function.

∽ CPU Thermal Monitor 2 (TM2)^(Note)

- ▶ Enabled Enable CPU Thermal Monitor 2 (TM2) function.(Default value)
- Disabled Disable CPU Thermal Monitor 2 (TM2) function.

∽ CPU EIST Function ^(Note)

- Enabled Enable CPU EIST function.(Default value)
- Disabled Disable CPU EIST function.

ORAM Data Integrity Mode

- ➡ ECC Enable Memory Error Checking and Correction feature when all installed DIMMs are 72bits width.
- ▶ Non-ECC Set DRAM Data Integrity Mode to Non-ECC. (Default value)

(Note) This item will show up when you install a processor that supports this function.

2-3 Integrated Periphera	IS	
CMOS Setup Uti	lity-Copyright (C) 1984-2005 Awar Integrated Peripherals	d Software
On-Chip Primary PCI IDE On-Chip Secondary PCI IDE	[Enabled] [Enabled]	▲ Item Help Menu Level▶
SATA RAID/AHCI Mode x On-Chip SATA Mode x PATA IDE Set to	[RAID] Auto Ch.1 Master/Slave	If a hard disk controller card is
SATA Port 0/2 Set to SATA Port 1/3 Set to USB Controller	Ch.2 Master/Slave Ch.3 Master/Slave [Enabled]	used, set at Disabled. [Enabled]
USB 2.0 Controller USB Keyboard Support USB Mouse Support	[Enabled] [Disabled] [Disabled]	Enable on-chip IDE Port.
Azalia Codec Onboard H/W 1394 Onboard H/W SATA ⁽¹⁾	[Auto] [Enabled] [Enabled]	[Disabled] Disable on-chip IDE Port.
H/W SATA Function Onboard H/W GigaRAID GigaRAID Function	[RAID] [Enabled] [RAID]	
Onboard H/W LAN1 Onboard H/W LAN2① ↑↓→←: Move Enter: Select +/-/	[Enabled] [Enabled] PU/PD: Value F10: Save	ESC: Exit F1: General Help
F3: Language F5: Previous Va	Ilues F6: Fail-Safe Defaults	F7: Optimized Defaults
CMOS Setup Uti	lity-Copyright (C) 1984-2005 Awar Integrated Peripherals	d Software
Onboard LAN1 Boot ROM Onboard LAN2 Boot ROM Onboard Serial Port 1 G-Keyless Port Onboard Parallel Port Parallel Port Mode x ECP Mode Use DMA	[Disabled] [Disabled] [3F8/IRQ4] [Enabled] [378/IRQ7] [SPP] 3	▲ Item Help Menu Level►

Integrated Deripherals

F3: Language ∽ On-Chip Primary PCI IDE

Enter: Select

 $\uparrow \downarrow \rightarrow \leftarrow$: Move

➡ Enabled Enable onboard 1st channel IDE port. (Default value)

+/-/PU/PD: Value

F10: Save

F6: Fail-Safe Defaults

ESC: Exit

F7: Optimized Defaults

F1: General Help

➡ Disabled Disable onboard 1st channel IDE port.

F5: Previous Values

○ On-Chip Secondary PCI IDE

- ➡ Enabled Enable onboard 2nd channel IDE port. (Default value)
- Disable onboard 2nd channel IDE port. ➡ Disabled

☞ SATA RAID / AHCI Mode

- ▶ RAID Select onboard Serial ATA function as RAID. (Default value)
- ► AHCI Support hotplug function under OS. WinXP, 2000 only.
- ➡ Disabled Select onboard Serial ATA function as ATA.

2 2

∽ On-Chip SATA Mode

Disabled	Disable this function.
► Auto	BIOS will detect automatically. (Default value)
➡ Combined	Set On-Chip SATA mode to Combined, you can use up to 4 HDDs on the motherboard; 2 for SATA and the other for PATA IDE.
Enhanced	Set On-Chip SATA mode to Enhanced, the motherboard allows up to 6 HDDs
	to use.
➡ Non-Combined	Set On-Chip SATA mode to Non-Combined, SATA will be simulated to PATA mode.

☞ PATA IDE Set to

▶ Ch.1 Master/Slave Set PATA IDE to Ch. 1 Master/Slave. (Default value)

▶ Ch.0 Master/Slave Set PATA IDE to Ch. 0 Master/Slave.

☞ SATA Port 0/2 Set to

➡ This value will be automatically made by the setting "On-Chip SATA Mode" and "PATA IDE Set to". If PATA IDE were set to Ch. 1 Master/Slave, this function will auto set to Ch. 0 Master/Slave.

☞ SATA Port 1/3 Set to

➡ This value will be automatically made by the setting "On-Chip SATA Mode" and "PATA IDE Set to". If PATA IDE were set to Ch. 0 Master/Slave, this function will auto set to Ch. 1 Master/Slave.

☞ USB Controller

➡ Enabled	Enable USB controller. (Default value)
Disabled	Disable USB controller.

☞ USB 2.0 Controller

Disable this function if you are not using onboard USB 2.0 feature.

- ➡ Enabled Enable USB 2.0 dontroller. (Default value)
- Disabled Disable USB 2.0 controller.

USB Keyboard Support

- Enabled Enable USB keyboard support.
- ✤ Disabled Disable USB keyboard support. (Default value)

☞ USB Mouse Support

Enabled Enable USB mouse support.
 Disabled Disable USB mouse support. (Default value)

Azalia Codec

▶ Auto▶ DisabledAuto detect Azalia audio function. (Default value)▶ DisabledDisable Azalia audio function.

Onboard H/W 1394

Enabled Enable onboard IEEE 1394 function. (Default value)
 Disabled Disable this function.

∽ Onboard H/W SATA[®]

Enabled Enable onboard H/W SATA function. (Default value)
 Disabled Disable this function.

∽ H/W SATA Function[®]

- ➡ RAID Set onboard H/W SATA function as RAID. (Default value)
- ➡ BASE Set onboard H/W SATA function as BASE(ATA).

① Only for GA-8I955X Royal.

Onboard H/W GigaRAID

- Enabled Enable onboard H/W GigaRAID function. (Default value)
- Disabled Disable this function.

☞ GigaRAID Function

RAID Set onboard H/W GigaRAID function as RAID. (Default value)
 ATA Set onboard H/W GigaRAID function as ATA.

∽ Onboard H/W LAN1 (LAN1 port)

- Enabled Enable onboard H/W LAN1 function. (Default value)
- Disabled Disable this function.

Onboard H/W LAN2 (LAN2 port)[©]

- Enabled Enable onboard H/W LAN2 function. (Default value)
- Disabled Disable this function.

∽ Onboard LAN1 Boot ROM (LAN1 port)

This function decide whether to invoke the boot ROM of the onboard LAN1 chip.

- ➡ Enabled Enable this function.
- Disabled
 Disable this function. (Default value)

∽ Onboard LAN2 Boot ROM (LAN2 port)[®]

This function decide whether to invoke the boot ROM of the onboard LAN2 chip.

- ➡ Enabled Enable this function.
- Disabled Disable this function. (Default value)

Onboard Serial Port 1

Auto BIOS will automatically setup the port 1 address.

- ➡ 3F8/IRQ4 Enable onboard Serial port 1 and address is 3F8/IRQ4. (Default value)
- ▶ 2F8/IRQ3 Enable onboard Serial port 1 and address is 2F8/IRQ3.
- ➡ 3E8/IRQ4 Enable onboard Serial port 1 and address is 3E8/IRQ4.
- ▶ 2E8/IRQ3 Enable onboard Serial port 1 and address is 2E8/IRQ3.
- Disabled Disable onboard Serial port 1.

☞ G-Keyless Port

- >> Enabled Enable G-Keyless Port. (Default value)
- ➡ Disabled Disable G-Keyless Port.

☞ Onboard Parallel Port

- Disabled Disable onboard LPT port.
- ▶ 378/IRQ7 Enable onboard LPT port and address is 378/IRQ7. (Default value)
- ▶ 278/IRQ5 Enable onboard LPT port and address is 278/IRQ5.
- ➡ 3BC/IRQ7 Enable onboard LPT port and address is 3BC/IRQ7.

∽ Parallel Port Mode

- ▶ SPP Using Parallel port as Standard Parallel Port. (Default value)
- ▶ EPP Using Parallel port as Enhanced Parallel Port.
- ➡ ECP Using Parallel port as Extended Capabilities Port.
- ➡ ECP+EPP Using Parallel port as ECP & EPP mode.

☞ ECP Mode Use DMA

- ➡ 3 Set ECP Mode Use DMA to 3. (Default value)
- ▶ 1 Set ECP Mode Use DMA to 1.

① Only for GA-8I955X Royal.

2-4 Power Management Setup

CMOS Setup Utility-Copyright (C) 1984-2005 Award Software Power Management Setup			
ACPI Suspend Type Soft-Off by PWR-BTTN PME Event Wake Up Power On by Ring Resume by Alarm × Date (of Month) Alarm Time (hhrmm:ss) Alarm Power On By Mouse Power On By Keyboard X KB Power ON Password AC BACK Function	[S1(POS)] [Instant-Off] [Enabled] [Enabled] [Disabled] Everyday 0:0:0 [Disabled] [Disabled] Enter [Soft-Off]	Item Help Menu Level≯ [S1] Set suspend type to Power On Suspend under ACPI OS [S3] Set suspend type to Suspend to RAM under ACPI OS	
	+/-/PU/PD: Value F10: Save ous Values F6: Fail-Safe Defaults	ESC: Exit F1: General Help F7: Optimized Defaults	

☞ ACPI Suspend Type

- ▶ S1(POS) Set ACPI suspend type to S1/POS(Power On Suspend). (Default value)
- S3(STR) Set ACPI suspend type to S3/STR(Suspend To RAM).

☞ Soft-Off by PWR-BTTN

- >> Instant-Off Press power button then Power off instantly. (Default value)
- Delay 4 Sec. Press power button 4 seconds to Power off. Enter suspend if button is pressed less than 4 seconds.

☞ PME Event Wake Up

- Disabled Disable this function.
- ✤ Enabled Enable PME Event Wake up. (Default value)

☞ Power On by Ring

- Disabled Disable Power on by Ring function.
- Enabled Enable Power on by Ring function. (Default value)

☞ Resume by Alarm

You can set "Resume by Alarm" item to enabled and key in Date/Time to power on system.

- Disabled
 Disable this function. (Default value)
- Enabled Enable alarm function to POWER ON system.
- If Resume by Alarm is Enabled.
- Date (of Month) Alarm : Everyday, 1~31
- ➡ Time (hh: mm: ss) Alarm : (0~23) : (0~59) : (0~59)

☞ Power On By Mouse

- Disabled Disabled this function. (Default value)
- >> Double Click Double click on PS/2 mouse left button to power on the system.

Power On By Keyboard

- ✤ Password Enter from 1 to 5 characters to set the Keyboard Power On Password.
- Disabled Disabled this function. (Default value)
- ➡ Keyboard 98 If your keyboard have "POWER Key" button, you can press the key to power on the system.

∽ KB Power ON Password

When "Power On by Keyboard" set at Password, you can set the password here.

Enter Input password (from 1 to 5 characters) and press Enter to set the Keyboard Power On password.

∽ AC BACK Function

➡ Soft-Off	When AC-power back to the system, the system will be in "Off" state.	
	(Default value)	
➡ Full-On	When AC-power back to the system, the system always in "On" state.	
Memory	When AC-power back to the system, the system will return to the Last state	
	before AC-power off.	

2-5 PnP/PCI Configurations

CMOS Setuj	p Utility-Copyright (C) 1984-2005 Award PnP/PCI Configurations	l Software
PCI 1 IRQ Assignment PCI 2 IRQ Assignment PCI 3 IRQ Assignment	[Auto] [Auto] [Auto]	<u>Item Help</u> Menu Level▶
		Device(s) using this INT: Mass Storage Cntrlr -Bus 5 Dev 0 Func 0 Display Cntrlr -Bus 1 Dev 0 Func 0 Multimedia Device
		-Bus 0 Dev27 Func 0 Bridge Device -Bus 0 Dev28 Func 0 Bridge Device -Bus 0 Dev1 Func 0 USB 1.1 Host Cntrlr -Bus 0 Dev28 Func 4
↑↓→←: Move Enter: Select F3: Language F5: Previo	+/-/PU/PD: Value F10: Save us Values F6: Fail-Safe Defaults	ESC: Exit F1: General Help F7: Optimized Defaults
 PCI 1 IRQ Assignment Auto 3,4,5,7,9,10,11,12,14,15 PCI 2 IRQ Assignment 	Auto assign IRQ to PCI 1. (Defau Set IRQ 3,4,5,7,9,10,11,12,14,15	,

✓ PCI 2 IRQ Assignment
 → Auto
 → 3,4,5,7,9,10,11,12,14,15

✓ PCI 3 IRQ Assignment → Auto → 3,4,5,7,9,10,11,12,14,15

Set IRQ 3,4,5,7,9,10,11,12,14,15 to PCI 2. Auto assign IRQ to PCI 3. (Default value)

Auto assign IRQ to PCI 2. (Default value)

Set IRQ 3,4,5,7,9,10,11,12,14,15 to PCI 3.

2-6 PC Health Status

CMOS Setup Utility-Copyright (C) 1984-2005 Award Software PC Health Status		
Reset Case Open Status	[Disabled]	Item Help
Case Opened		Menu Level▶
Vcore	OK	
DDRV	OK	
+3.3V	OK	
+12V	OK	
Current CPU Temperature		
Current CPU FAN Speed	4687 RPM	
Current POWER FAN Speed	0 RPM	
Current SYSTEM FAN Speed	0 RPM	
CPU Warning Temperature	[Disabled]	
CPU FAN Fail Warning	[Disabled]	
POWER FAN Fail Warning	[Disabled]	
SYSTEM FAN Fail Warning	[Disabled]	
CPU Smart FAN Control	[Enabled]	
CPU Smart FAN Mode	[Auto]	
$\uparrow \downarrow \rightarrow \leftarrow$: Move Enter: Select +/-	/PU/PD: Value F10: Save	ESC: Exit F1: General Help
	Values F6: Fail-Safe Defaults	F7: Optimized Defaults

Constant Case Open Status

- Disabled Don't reset case open status. (Default value)
- Enabled Clear case open status at next boot.

☞ Case Opened

If the case is closed, "Case Opened" will show "No". If the case has been opened, "Case Opened" will show "Yes". If you want to reset "Case Opened" value, set "Reset Case Open Status" to **Enabled** then save BIOS setup and restart your system.

∽ Current Voltage(V) Vcore / DDRV / +3.3V / +12V

➡ Detect system's voltage status automatically.

∽ Current CPU Temperature

▶ Detect CPU temperature automatically.

∽ Current CPU/POWER/SYSTEM FAN Speed (RPM)

▶ Detect CPU/POWER/SYSTEM fan speed status automatically.

∽ CPU Warning Temperature

- ▶ 60°C / 140°F Monitor CPU temperature at 60°C / 140°F.
- ▶ 70°C / 158°F Monitor CPU temperature at 70°C / 158°F.
- ▶ 80°C / 176°F Monitor CPU temperature at 80°C / 176°F.
- ▶ 90°C / 194°F Monitor CPU temperature at 90°C / 194°F.
- ✤ Disabled Disable this function. (Default value)

CPU/POWER/SYSTEM FAN Fail Warning

- >> Disabled Disable fan fail warning function. (Default value)
- Enabled Enable fan fail warning function.

○ CPU Smart FAN Control

- ▶ Disabled Disable this function.
- Enabled When this function is enabled, CPU fan will run at different speed depending on CPU temperature. Users can adjust the fan speed with Easy Tune based on their requirements. (Default value)

☞ CPU Smart FAN Mode

This option is available only when CPU Smart FAN Control is enabled.

- Auto BIOS autodetects the type of CPU fan you installed and sets the optimal CPU Smart FAN control mode for it. (Default value)
- ▶ Voltage Set to Voltage when you use a CPU fan with a 3-pin fan power cable.
- ▶ PWM Set to PWM when you use a CPU fan with a 4-pin fan power cable.



In fact, the **Voltage** option can be used for CPU fans with 3-pin or 4-pin power cables. However, some 4-pin CPU fan power cables are not designed following Intel 4-wire fans PWM control specifications. With such CPU fans, selecting PWM will not effectively reduce the fan speed.

2-7 MB Intelligent Tweaker(M.I.T.)

CMOS Setup Utility-Copyright (C) 1984-2005 Award Software MB Intelligent Tweaker(M.I.T.)			
C.A.M. ^(Note) CPU Clock Ratio ^(Note) Robust Graphics Booster C.I.A. 2 CPU Host Clock Control x CPU Host Frequency(Mhz) x PCI Express Frequency(Mhz) System Memory Multiplier Memory Frequency (Mhz) DIMM OverVoltage Control PCI-E OverVoltage Control FSB OverVoltage Control CPU Voltage Control Normal CPU Vcore	High] [15X] [Auto] [Disabled] [Disabled] 200 Auto [Auto] 533 [Normal] [Normal] [Normal] [Normal] [Normal] 1.3875V	Item Help Menu Level≯ CPU Adjustable Multipli er Set Clock Ratio For Frequency-locked CPU	
	+/-/PU/PD: Value F10: Save s Values F6: Fail-Safe Defaults	ESC: Exit F1: General Help F7: Optimized Defaults	

Incorrect using these features may cause your system broken. For power end-user use only.

· C.A.M. (Note)

➡ High	Set clock ratio for frequency-locked CPU to High. (Default value)
► Low	Set clock ratio for frequency-locked CPU to Low.

☞ CPU Clock Ratio (Note)

This setup option will automatically assign by CPU detection.

The option will display "Locked" and read only if the CPU ratio is not changeable.

☞ Robust Graphics Booster

Select the options can enhance the VGA graphics card bandwidth to get higher performance.

- ✤ Auto Set Robust Graphics Booster to Auto. (Default value)
- ➡ Fast Set Robust Graphics Booster to Fast.
- ✤ Turbo Set Robust Graphics Booster to Turbo.

ං C.I.A.2

C.I.A.2 (CPU Intelligent Accelerator 2) is designed to detect CPU loading during software program executing, and automatically adjust CPU computing power to maximize system performance.

- Disabled Disable this function. (Default value)
- Cruise Set C.I.A.2 to Cruise. Automatically increase CPU frequency(5%,7%) by CPU loading.
- ✤ Sports Set C.I.A.2 to Sports. Automatically increase CPU frequency(7%,9%) by CPU loading.
- ➡ Racing Set C.I.A.2 to Racing. Automatically increase CPU frequency(9%,11%) by CPU loading.
- Turbo Set C.I.A.2 to Turbo. Automatically increase CPU frequency(15,17%) by CPU loading.

(Note) This item will show up when you install a processor that supports this function.

✤ Full Thrust Set C.I.A.2 to Full Thrust. Automatically increase CPU frequency(17%,19%) by CPU loading.

Warning: Stability is highly dependent on system components.

CPU Host Clock Control

>> Disabled Disable CPU Host Clock Control. (Default value)

➡ Enabled Enable CPU Host Clock Control.

CPU Host Frequency(Mhz)

▶ 100Mhz ~ 600Mhz Set CPU Host Clock from 100Mhz to 600Mhz.

The actual range depends on the CPU you install. If you use a 533Mhz FSB processor, please set CPU Host Frequency to 133Mhz. If you use an 800Mhz FSB processor, please set CPU Host Frequency to 200Mhz.If you use a 1066Mhz FSB processor, please set CPU Host Frequency to 266Mhz.

∽ PCI Express Frequency(Mhz)

✤ Auto Set PCI Express frequency automatically. (Default value)

▶ 90Mhz ~ 150Mhz Set PCI Express frequency from 90Mhz to 150Mhz.

System Memory Multiplier

Wrong frequency may make system can't boot, clear CMOS to overcome wrong frequency issue. for FSB(Front Side Bus) frequency=533Mhz,

- ➡ 3.00 Memory Frequency = Host clock X 3.00.
- ✤ 4.00 Memory Frequency = Host clock X 4.00.
- ▶ 2.00 Memory Frequency = Host clock X 2.00.
- ▶ 2.66 Memory Frequency = Host clock X 2.66.
- ➡ 3.33 Memory Frequency = Host clock X 3.33.
- ▶ 1.50 Memory Frequency = Host clock X 1.50.
- ▶ 2.0- Memory Frequency = Host clock X 2.0-.
- 2.50 Memory Frequency = Host clock X 2.50.

✤ Auto Set Memory frequency by DRAM SPD data. (Default value)

for FSB(Front Side Bus) frequency=800MHz,

- ▶ 2.00 Memory Frequency = Host clock X 2.00.
- ▶ 2.66 Memory Frequency = Host clock X 2.66.
- ▶ 3.33 Memory Frequency = Host clock X 3.33.
- ➡ 3.00 Memory Frequency = Host clock X 3.00.
- ✤ 4.00 Memory Frequency = Host clock X 4.00.
- ▶ 1.50 Memory Frequency = Host clock X 1.50.
- ▶ 2.0- Memory Frequency = Host clock X 2.0-.
- 2.50 Memory Frequency = Host clock X 2.50.

▶ Auto Set Memory frequency by DRAM SPD data. (Default value)

for FSB(Front Side Bus) frequency=1066MHz,

- ▶ 1.50 Memory Frequency = Host clock X 1.50.
- ▶ 2.00 Memory Frequency = Host clock X 2.00.
- ▶ 2.50 Memory Frequency = Host clock X 2.50.
- ▶ 2.0+ Memory Frequency = Host clock X 2.0+.
- ▶ 2.66 Memory Frequency = Host clock X 2.66.
- ➡ 3.33 Memory Frequency = Host clock X 3.33.
- ➡ 3.00 Memory Frequency = Host clock X 3.00.
- ▶ 4.00 Memory Frequency = Host clock X 4.00.
- ➤ Auto Set Memory frequency by DRAM SPD data. (Default value)

Memory Frequency (Mhz)

>> The values depend on CPU Host Frequency(Mhz) and System Memory Multiplier setting.

DIMM OverVoltage Control

- Normal Set DIMM OverVoltage Control to Normal. (Default value)
- ➡ +0.1V Set DIMM OverVoltage Control to +0.1V.
- ➡ +0.2V Set DIMM OverVoltage Control to +0.2V.
- ➡ +0.3V Set DIMM OverVoltage Control to +0.3V.
- ➡ +0.4V Set DIMM OverVoltage Control to +0.4V.
- ➡ +0.5V Set DIMM OverVoltage Control to +0.5V.
- ➡ +0.6V Set DIMM OverVoltage Control to +0.6V.

∽ PCI-E OverVoltage Control

- ✤ Normal Set PCI-E OverVoltrage Control to Normal. (Default value)
- ➡ +0.05V Set PCI-E OverVoltrage Control to +0.05V.
- ➡ +0.10V Set PCI-E OverVoltrage Control to +0.10V.
- ➡ +0.15V Set PCI-E OverVoltrage Control to +0.15V.
- ➡ +0.20V Set PCI-E OverVoltrage Control to +0.20V.
- ➡ +0.25V Set PCI-E OverVoltrage Control to +0.25V.
- ➡ +0.30V Set PCI-E OverVoltrage Control to +0.30V.
- ➡ +0.35V Set PCI-E OverVoltrage Control to +0.35V.

☞ FSB OverVoltage Control

- ✤ Normal Set FSB OverVoltrage Control to Normal. (Default value)
- ➡ +0.05V Set FSB OverVoltrage Control to +0.05V.
- ➡ +0.10V Set FSB OverVoltrage Control to +0.10V.
- ➡ +0.15V Set FSB OverVoltrage Control to +0.15V.
- ➡ +0.20V Set FSB OverVoltrage Control to +0.20V.
- ➡ +0.25V Set FSB OverVoltrage Control to +0.25V.
- ➡ +0.30V Set FSB OverVoltrage Control to +0.30V.
- ➡ +0.35V Set FSB OverVoltrage Control to +0.35V.

☞ CPU Voltage Control

Supports adjustable CPU Vcore from 0.8375V to 1.6000V. (Default value: Normal)

Ormal CPU Vcore

➡ Display your CPU's normal voltage.

2-8 Select Language



Multi-language supports 3 languages. There are English, Traditional Chinese, and Simplified Chinese.

2-9 Load Fail-Safe Defaults

CMOS Setup Utility-Copyright (C) 1984-2005 Award Software			
► ►	Standard CMOS Features	Select Language	
	Advanced BIOS Features	Load Fail-Safe Defaults	
.∥ ▶	Integrated Peripherals	Load Optimized Defaults	
.∥ ▶	Power Ma		
	PnP/PCI (Load Fail-Safe E	Defaults (Y/N)? N	
.∥ ▶	PC Health Status	Save & EXIT Setup	
►	MB Intelligent Tweaker(M.I.T.)	Exit Without Saving	
Esc	:: Quit	F3: Change Language	
F8:	Dual BIOS/Q-Flash	F10: Save & Exit Setup	
	Load Fail-Safe Defaults		

Fail-Safe defaults contain the most appropriate values of the system parameters that allow minimum system performance.

2-10 Load Optimized Defaults

CMOS Setup Utility-Copyright (C) 1984-2005 Award Software		
Standard CMOS Features Advanced BIOS Features Integrated Peripherals	Select Language Load Fail-Safe Defaults Load Optimized Defaults	
 Power Mc PnP/PCI (Load Optimized) PC Health status MB Intelligent Tweaker(M.I.T.) 	Defaults (Y/N)? N Bare & Exit Scup Exit Without Saving	
Ese: Quit F3: Change Language F8: Dual BIOS/Q-Flash F10: Save & Exit Setup Load Optimized Defaults		

Selecting this field loads the factory defaults for BIOS and Chipset Features which the system automatically detects.

2-11 Set Supervisor/User Password

CMOS Setup Utility-Copyright (C) 1984-2005 Award Software		
Standard CMOS Features Advanced BIOS Features Integrated Peripherals Power Management Sector PnP/PCI Enter Password:	Select Language Load Fail-Safe Defaults Load Optimized Defaults	
PC Health MB Intelligent Tweaker(M.I.T.)	Exit Without Saving	
Esc: Quit F3: Change Language F8: Dual BIOS/Q-Flash F10: Save & Exit Setup Change/Set/Disable Password		

When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

Type the password, up to eight characters, and press <Enter>. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

To disable password, just press <Enter> when you are prompted to enter password. A message "PASSWORD DISABLED" will appear to confirm the password being disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

The BIOS Setup program allows you to specify two separate passwords:

SUPERVISOR PASSWORD and a USER PASSWORD. When disabled, anyone may access all BIOS Setup program function. When enabled, the Supervisor password is required for entering the BIOS Setup program and having full configuration fields, the User password is required to access only basic items.

If you select "System" at "Password Check" in Advance BIOS Features Menu, you will be prompted for the password every time the system is rebooted or any time you try to enter Setup Menu.

If you select "Setup" at "Password Check" in Advance BIOS Features Menu, you will be prompted only when you try to enter Setup.

2-12 Save & Exit Setup

CMOS Setup Utility-Copyright (C) 1984-2005 Award Software		
 Standard CMOS Features Advanced BIOS Features 	Select Language Load Fail-Safe Defaults	
 Integratec Power Ma 	nd EXIT (Y/N)? Y	
 PnP/PCI Configurations PC Health Status 	Set User Password Save & Exit Setup	
MB Intelligent Tweaker(M.I.T.)	Exit Without Saving	
Esc: Quit	F3: Change Language	
F8: Dual BIOS/Q-Flash	F10: Save & Exit Setup	
Save & Exit Setup		

Type "Y" will quit the Setup Utility and save the user setup value to RTC CMOS. Type "N" will return to Setup Utility.

2-13 Exit Without Saving

CMOS Setup Utility-Copyright (C) 1984-2005 Award Software			
 Standard CMOS Features Advanced BIOS Features Integrated Peripherals 	Select Language Load Fail-Safe Defaults Load Optimized Defaults		
▶ PnP/PCI (aving (Y/N)? N		
 PC Health Status MB Intelligent Tweaker(M.I.T.) 	Save & Exit Setup Exit Without Saving		
Esc: Quit	F3: Change Language		
F8: Dual BIOS/Q-Flash	F10: Save & Exit Setup		
Abandon all Data			

Type "Y" will quit the Setup Utility without saving to RTC CMOS. Type "N" will return to Setup Utility.

Chapter 3 Drivers Installation



Pictures below are shown in Windows XP.

Insert the driver CD-title that came with your motherboard into your CD-ROM drive, the driver CD-title will auto start and show the installation guide. If not, please double click the CD-ROM device icon in "My computer", and execute the Run.exe.

Install Chipset Drivers 3-1

"Xpress Install " is now analyizing your computer....99%

After insert the driver CD, "Xpress Install" will scan automatically the system and then list all the drivers that recommended to install. Please pick the item that you want and press "install" followed the item; or you can press "Xpress Install" to install all items defaulted.

	Install Chipset Drivers The following drivers listed below are recommended to be installed for your motherboard. Please click on the "Xpress Install" to in organizities drivers are through to be installed, uncheck the selected drivers will not be installed.	stall all drivers automatically
oftware pplications	XPress Install	
river CD	🔀 INF Update Utility	Install
formation	Size 935.1KB Version 7.0.0.1019	
ardware formation	This utility installs INF files that inform the operating system how to properly configure the chipset for specific functionality USB interface.	such as PCI-Express or
	Microsoft® UAA Bus driver for Intel® High Definition Audio	Install
ontact Us	Size 69.0MB Version 1.0	
	2 Microsoft Vindows XP Service Pack 1 (SP1) 3 Microsoft Vindows 2000 Service Pack 4 (SP4) TeleRealtek Audio Codec Driver	Install
	Size 32.6MB Version 510.05123	
	The Realtek Audio Codec driver provides support for 7.1 channel audio.	
	EroadCom PCI-Express Interface Gigabit LAN Driver	Install
	Size 61.3MB Version 7.97	
	Installs drivers for BroadCorn Gigabit LAN Driver.	
	🗹 GIGARAID IT8212 RAID Driver	Install
	Size 8.0MB Version 1.7.1.92	
	The GIGARAID IT8212 RAID driver provides support for ATA133 mode and RAID 0, RAID 1 & RAID 0+1	
	Silicon Image 3132 RAID Driver	Install
	Size 1.0MB Version 12.3.1	
	Size 1.0MB Version 1.2.3.1 The Silicon Image Serial-ATA driver provides support for all RAID function.	



Some device drivers will restart your system automatically. After restarting your system the "Xpress Install" will continue to install other drivers. System will reboot automatically after install the drivers, afterward you can install others application.



For USB2.0 driver support under Windows XP operating system, please use Windows Service Pack. After install Windows Service Pack, it will show AUTION a guestion mark "?" in "Universal Serial Bus controller" under "Device Manager". Please remove the question mark and restart the system (System will auto-detect the right USB2.0 driver).

3-2 Software Applications

This page displays all the tools that Gigabyte developed and some free software, you can choose anyone you want and press "install" to install them.

	Software Applications Please click on the following applications listed below to install	
Software Applications		
Driver CD Information	GIGABYTE C.O.M. (Corporate Online Manager) Size 8.4MB	Install
Hardware Information	A web-based system management tool that allows client system hardware information such as CPU a controlled via a host.	and memory and graphics card and much more to be monitored or
Contact Us	EasyTune 5 Size 47NB An easy-to-use Windows-based system enhancement utility allowing guidk access to a variety of per	Install
	An easy-to-table verification system enhancement daily anowing cluck access to a variety or per- DNI Viewer	Install
	Size 1012.9KB DMI Viewer provides a management tool for viewing motherboard hardware information.	
	Face Wizard	install
	Size 1.9MB Face Witzend provides utility for customizing BIOS boot up screen.	
	@BIOS	Install
	Size 1 DMB @BIOS provides utility for updating BIOS through internet.	
	Acrobat Reader	Install
	Size 8.5MB Utility for viewing or printing Adobe Portable Document Format (PDF) files.	
	Norton Internet Security(NIS)	Install

3-3 Driver CD Information

This page lists the contents of software and drivers in this CD-title.

Install Chipset Drivers	Driver CD information The following information shows the detail contents stored in this Driver CD.		
Software Applications			
Driver CD	ChipsetWIA		
nformation	Directory Name	Description	
Hardware nformation	Intel® chipset software installation utility for Windows XP		
Contact Us	• IAA	Intel® application accelerator for Windows XP Intel® application accelerator for Windows 2000	
	• VGA	-Win2k_XP -Intel® Graphics Media Accelerator Driver for Windows XP -Win2k_XP -Intel® Graphics Media Accelerator Driver for Windows 2000	
	EnableUSBS3Xp	Enable USB device back form S3 mode	
	Viudio		
	Directory Name	Description	
	 cmedia 	cmedia AC'97 Audio Driver	
	 Realtek 	Reatlek AC'97 Audio Driver	
	Welwork		
	Directory Name	Description	
	 Rti8139 	LAN Driver for RealTek 8139/8100/8110s	
	Marvell	Marvell 10/100/1000 Base LAN driver	
	BroadCom	BroadCom PCI-E LAN driver	
	Wher		
	Directory Name	Description	

3-4 Hardware Information

This page lists all device you have for this motherboard.

Install Chipset Drivers	Hardware information The following information shows the detail hardware information of your motherboard.	
Software Applications		
Driver CD Information	System Info Bios Info Bios for 8095/RO E4 CPU Info CPU info Ceruinatellete CPU Info CPU info Ceruinatellete	1
Hardware Information	Memory Info:261.612 KB RAM	_
Contact Us	1331 Device Description: Texas Instruments OHCI Compliant/IEEE 1394 Host Controller Device Driver Provider: Microsoft	
Synfam Device Description:http://g.0200184/CA.PCI Bridge - 244E Device Description:PCI standard net CPU bridge Device Description:PCI standard net CPU bridge Device Device Description:PCI standard net CPU bridge		
	Device Description:PCI standard PCI-to-PCI bridge DeviceD DriverProvider:Microsoft	
	Device Description:PCI standard ISA bridge Device DriverProvide: Microsoft	
	Device Description:PCI standard PCI-to-PCI bridge Device Drive Provide: Microsoft	
	Device Description:PCI standard PCI-to-PCI bridge	

3-5 Contact Us

Please see the last page for details.



Chapter 4 Appendix

4-1 Unique Software Utilities

(Not all model support these Unique Software Utilities, please check your MB features.)

U-PLUS D.P.S. (Universal Plus Dual Power System)

The U-Plus Dual Power System (U-Plus DPS) is a revolutionary eight-phase power circuit built for ultimate system protection. Designed to withstand varying current levels and changes, the U-Plus D.P.S. provides an immensely durable and stable power circuit to the CPU for solid system stability. These characteristics make it the ideal companion with the latest LGA775 Intel® Pentium® 4 Processor as well as future Intel® processors. As well, 4 blue LED's are mounted on the U-Plus D.P.S. for intelligent indication of system loading.



M.I.T. (Motherboard Intelligent Tweaker)

Motherboard Intelligent Tweaker (M.I.T.) allows user to access and change BIOS feature settings with relative speed and ease. Through GIGABYTE M.I.T. feature the user is no longer required to switch into different modes within BIOS setup in order to change system settings such as the CPU system bus, memory timings or to enabled Gigabyte's unique C.I.A. 2 and M.I.B. 2 features. M.I.T.'s integration of all platform performance settings into a single mode now gives any user the ability to control and enhance their computer system to the desired level.



C.I.A.2 (CPU Intelligent Accelerator 2)

GIGABYTE CPU Intelligent Accelerator 2(C.I.A. 2) is designed to automatically adjust CPU computing power to maximize system performance. When enabled, the program detects the current CPU loading and automatically accelerates the CPU computing performance to allow for a faster and smoother execution of programs. When the function is disabled, the CPU is returned to its initial status.



S() S





M.I.B.2 (Memory Intelligent Booster 2)

Built on the original M.I.B., the new Memory Intelligent Booster 2 (M.I.B. 2) is designed especially to maximize memory performance and boost memory bandwidth up to 10%. With added branded memory module information, users are able to optimize memory performance by selecting from a recommended memory module list.

S.O.S. (System Overclock Saver)

System Overclock Saver (S.O.S.) is a unique feature that eliminates system boot-up errors resulting from system over-enhancement by the user. With GIGABYTE's proprietary S.O.S. feature, users no longer need to open up the PC chassis and short-circuit the "Clear CMOS" pins or the battery on the motherboard to reset the system back to factory default settings. Instead, S.O.S. automatically resets the overclocked system settings back to their factory defaults to provide a more user-friendly and reliable platform for users.

Download Center

Download Center allows users to quickly download and update their BIOS as well as the latest drivers for their system. Download Center automatically runs a system check of the user PC and provides the user with the current system information as well as displaying a detailed list of all new drivers with the option for download.

C.O.M. (Corporate Online Management)

A web-based system management tool that allows system hardware information such as CPU, memory, graphics card, etc. to be monitored and controlled via the Internet, C.O.M. allows corporate MIS engineers to easily maintain corporate computers such as providing the most up-to-date drivers and BIOS.

4-1-1 EasyTune 5 Introduction

EasyTune 5 presents the most convenient Windows based system performance enhancement and manageability utility. Featuring several powerful yet easy to use tools such as 1) Overclocking for enhancing system performance, 2) C.I.A. and M.I.B. for special enhancement for CPU and Memory, 3) Smart-Fan control for managing fan speed control of both CPU cooling fan and North-Bridge Chipset cooling fan, 4) PC health for monitoring system status.^(Note)

User Interface Overview



	Button / Display	Description
1.	Overclocking	Enters the Overclocking setting page
2.	C.I.A./C.I.A.2 and M.I.B./M.I.B.2	Enters the C.I.A./2 and M.I.B./2 setting page
3.	Smart-Fan	Enters the Smart-Fan setting page
4.	PC Health	Enters the PC Health setting page
5.	GO	Confirmation and Execution button
6.	"Easy Mode" & "Advance Mode"	Toggles between Easy and Advance Mode
7.	Display screen	Display panel of CPU frequency
8.	Function display LEDs	Shows the current functions status
9.	GIGABYTE Logo	Log on to GIGABYTE website
10.	Help button	Display EasyTune™ 5 Help file
11.	Exit or Minimize button	Quit or Minimize EasyTune™ 5 software

(Note) EasyTune 5 functions may vary depending on different motherboards.

4-1-2 Xpress Recovery Introduction



What is Xpress Recovery ?

Xpress Recovery is a utility used to back up and restore an OS partition. If the hard drive is not working properly, the user can restore the drive to its original state.

- 1. Supports FAT16, FAT32, and NTFS formats
- 2. Must be connected to the IDE1 Master
- 3. Allows installation of only one OS
 - 4. Must be used with an IDE hard disk supporting HPA
 - The first partition must be set as the boot partition. When the boot partition is backed up, please do not alter its size.
 - Xpress Recovery is recommended when using Ghost to return boot manager to NTFS format.

How to use the Xpress Recovery

1. Boot from CD-ROM (BMP Mode)

Enter the BIOS menu, select "Advanced BIOS Feature" and set to boot from CD-ROM. Insert the provided driver CD into your CD drive, then save and exit the BIOS menu. Once the computer has restarted, the phrase "Boot from CD:" will appear at the bottom left-hand corner of the screen. When "Boot from CD:" appears, press any key to enter Xpress Recovery.

Once you have completed this step, subsequent access to Xpress Recovery can also function by pressing the F9 key during computer power on.

Verifying DMI Pool Data Boot from CD:	Boot from CD:
G	GABATE
Xpress Recovery	V1.0 (C) Copy Right 2003. GIGABYTE Technology CO., Ltd.
	1. Execute Backup Utility
	2. Execute Restore Utility 3. Remove Backup Image
	4. Set Password 5. Exit and Restart
	5. EXit and Restan

2. Press F9 during powering on the computer. (Text Mode) Press F9 during powering on the computer .



GIGA-BYTE		
Xpress Recovery V1.0 (C) Copy Right 2003. GIGABYTE Technology CO. , Ltd.		
 Execute Backup Utility Execute Restore Utility Remove Backup Image Set Password Exit and Restart 		

- If you have already entered Xpress Recovery by booting from the CD-ROM, you can enter Xpress Recovery in the future by pressing the F9 key.
- 2. System storage capacity as well as drive reading/writing speed will affect backup speed.
- 3. It is recommended that Xpress Recovery be immediately installed after OS and all required driver and software installations are complete.

1. Execute Backup Utility:

The backup utility will automatically scan your system and back up data as a backup image in your hard drive.



Not all systems support access to Xpress Recovery by pressing the F9 key during computer power on. If this is the case, please use the boot from CD-ROM method to enter Xpress Recovery.

2. Execute Restore Utility:

This program will recover your system to factory default.

Press R to restore your system back to factory default or press Esc to exit

Restores backup image to original state.

3. Remove Backup Image:

Remove backup image. Are you sure? (Y/N)

Remove the backup image.

4. Set Password:

Please input a 4-16 character long password (a-z or 0-9) or press Esc to exit

You can set a password to enter Xpress Recovery to protect your hard disk data. Once this is done, password input will be required to enter Xpress Recovery during the next as well as subsequent system restarts. If you wish to remove the need for password entry, please select "Set Password" and under "New Password/Confirm Password", make sure there is no entry and then press "Enter" to remove password requirement.

5. Exit and Restart:

Exit and restart your computer.

4-1-3 Flash BIOS Method Introduction



A. What is Dual BIOS Technology?

Dual BIOS means that there are two system BIOS (ROM) on the motherboard, one is the Main BIOS and the other is Backup BIOS.

Under the normal circumstances, the system works on the Main BIOS. If the Main BIOS is corrupted or damaged, the Backup BIOS can take over while the system is powered on. This means that your PC will still be able to run stably as if nothing has happened in your BIOS.

B. How to use Dual BIOS and Q-Flash Utility?

a. After power on the computer, pressing immediately during POST (Power On Self Test) it will allow you to enter Award BIOS CMOS SETUP, then press <F8> to enter Flash utility.

 CMOS Setup Utility-Copyright (C) 1984-2004 Award Software				
►	Standard CMOS Features	Load Fail-Safe Defaults		
•	Advanced BIOS Features	Load Optimized Defaults		
•	Integrated Peripherals	Set Supervisor Password		
•	Power Management Setup	Set User Password		
PnP/PCI Configurations		Save & Exit Setup		
 PC Health Status 		Exit Without Saving		
•	MB Intelligent Tweaker(M.I.T.)			
FSC. Quit ↑↓→←: Select Item				
F8: Dual BIOS/Q-Flash F10: Save & Exit Setup				
Time, Date, Hard Disk Type				

b. Dual BIOS / Q-Flash Programming Utility

Dual BIOS Utility V1.33				
Boot From	Main Bios			
Main ROM Type/Size	SST 49LF004A	512K		
Backup ROM Type/Size	SST 49LF004A	512K		
Wide Range Protection	Disable			
Boot From	Main Bios			
Auto Recovery	Enable			
Halt On Error	Disable			
Keep DMI Data	Enable			
Copy Main ROM Data to Backup				
Load Default Settings				
Save Settings to CMOS				
Q-Flash Utility				
Update Main BIOS from Floppy				
Update Backup BIOS from Floppy				
Save Main BIOS to Floppy				
Save Backup BIOS to Floppy				
PgDn/PgUp: Modify ↑↓: Move	ESC: Reset	F10: Power Off		

c. Dual BIOS Item explanation:

Wide Range Protection: Disable(Default), Enable

Status 1:

If any failure (ex. Update ESCD failure, checksum error or reset? occurs in the Main BIOS, just before the Operating System is loaded and after the power is on, and that the Wide Range Protection is set to "Enable", the PC will boot from Backup BIOS automatically.

Status 2:

If the ROM BIOS on peripherals cards(ex. SCSI Cards, LAN Cards,..) emits signals torequest restart of the system after the user make any alteration on it, the boot up BIOS will not be changed to the Backup BIOS.

Boot From : Main BIOS(Default), Backup BIOS

Status 1:

The user can set to boot from main BIOS or Backup BIOS.

Status 2:

If one of the main BIOS or the Backup BIOS fails, this item "Boot From : Main BIOS(Default)" will become gray and will not be changed by user.

Auto Recovery : Enable(Default), Disable

When one of the Main BIOS or Backup BIOS occurs checksum failure, the working BIOS will automatically recover the BIOS of checksum failure.

(In the Power Management Setup of the BIOS Setting, if ACPI Suspend Type is set to Suspend to RAM, the Auto Recovery will be set to Enable automatically.)

(If you want to enter the BIOS setting, please press "Del" key when the boot screen appears.)

Halt On Error : Disable(Default), Enable

If the BIOS occurs a checksum error or the Main BIOS occurs a WIDE RANGE PROTECTION error and Halt On Error set to Enable, the PC will show messages on the boot screen, and the system will pause and wait for the user's instruction.

If Auto Recovery :Disable, it will show <or the other key to continue.>

If Auto Recovery : Enable, it will show <or the other key to Auto Recover.>

Keep DMI Data : Enable(Default), Disable

Enable: The DMI data won't be replaced by flashing new BIOS.(recommend) Disable: The DMI data will be replaced by flashing new BIOS.

Copy Main ROM Data to Backup

(If you boot from Backup ROM, this item will change to Copy Backup ROM Data to Main) Auto recovery message:

BIOS Recovery: Main to Backup

The means that the Main BIOS works normally and could automatically recover the Backup BIOS.

BIOS Recovery: Backup to Main

The means that the Backup BIOS works normally and could automatically recover the Main BIOS. (This auto recovery utility is set by system automatically and can't be changed by user.)

Load Default Settings

Load dual BIOS default value.

Save Settings to CMOS

Save revised setting.



Method 1 : Q-Flash™ Utility

Q-Flash[™] is a BIOS flash utility embedded in Flash ROM. With this utility, users only have to stay in the BIOS menu when they want to update BIOS. Q-Flash[™] allows users to flash BIOS without any utility in DOS or

Windows. Using Q-Flash™ indicating no more fooling around with any complicated instructions and operating system since it is in the BIOS menu.



Please note that because updating BIOS has potential risk, please do it with caution!! We are sorry that Gigabyte Technology Co., Ltd is not responsible for damages of system because of incorrect manipulation of updating BIOS to avoid any claims from end-users.

Before You Begin:

Before you start updating BIOS with the Q-Flash™ utility, please follow the steps below first.

- 1. Download the latest BIOS for your motherboard from Gigabyte's website.
- Extract the BIOS file downloaded and save the BIOS file (the one with model name.Fxx. For example, 8KNXPU.Fba) to a floppy disk.
- 3. Reboot your PC and press Del to enter BIOS menu.

The BIOS upgrading guides below are separated into two parts. If your motherboard has dual-BIOS, please refer to **Part One**. If your motherboard has single-BIOS, please refer to **Part Two**.

Part One:

Updating BIOS with Q-Flash™ Utility on Dual BIOS Motherboards.

Some of Gigabyte motherboards are equipped with dual BIOS. In the BIOS menu of the motherboards supporting Q-Flash and Dual BIOS, the Q-Flash utility and Dual BIOS utility are combined in the same screen. This section only deals with how to use Q-Flash utility.

In the following sections, we take GA-8KNXP Ultra as the example to guide you how to flash BIOS from an older version to the latest version. For example, from Fa3 to Fba.



Entering the Q-Flash[™] utility:

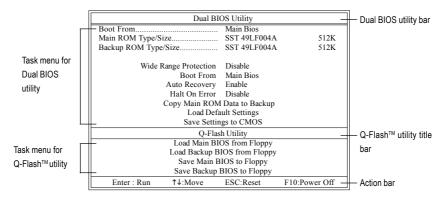
Step1: To use Q-Flash utility, you must press Del in the boot screen to enter BIOS menu.

	CMOS Setup Utility-Copyright (C) 1984-2004 Award Software				
► ►	Standard CMOS Features	Select Language			
	Advanced BIOS Features	Load Fail-Safe Defaults			
	Integrated Peripherals	Load Optimized Defaults			
∥ ▶	Power Management Setup	Set Supervisor Password			
	PnP/PCI Configurations	Set User Password			
	PC Health Status	Save & Exit Setup			
►	MB Intelligent Tweaker(M.I.T.)	Exit Without Saving			
ES	FSC. Quit F3: Change Language				
F8:	F8: Dual BIOS/Q-Flash F10: Save & Exit Setup				
	Time, Date, Hard Disk Type				

Step 2: Press F8 button on your keyboard and then Y button to enter the Dual BIOS/Q-Flash utility.

Exploring the Q-Flash[™] / Dual BIOS utility screen

The Q-Flash / Dual BIOS utility screen consists of the following key components.



Task menu for Dual BIOS utility:

Contains the names of eight tasks and two item showing information about the BIOS ROM type. Blocking a task and pressing Enter key on your keyboard to enable execution of the task.

Task menu for Q-Flash utility:

Contains the names of four tasks. Blocking a task and pressing Enter key on your keyboard to enable execution of the task.

Action bar:

Contains the names of four actions needed to operate the Q-Flash/Dual BIOS utility. Pressing the buttons mentioned on your keyboards to perform these actions.

Using the Q-Flash[™] utility:

This section tells you how to update BIOS using the Q-Flash utility. As described in the "Before you begin" section above, you must prepare a floppy disk having the BIOS file for your motherboard and insert it to your computer. If you have already put the floppy disk into your system and have entered the Q-Flash utility, please follow the steps below to flash BIOS.

Steps:

Press arrow buttons on your keyboard to move the light bar to "Load Main BIOS from Floppy" item in 1. the Q-Flash menu and press Enter button.

Later, you will see a box pop up showing the BIOS files you previously downloaded to the floppy disk.



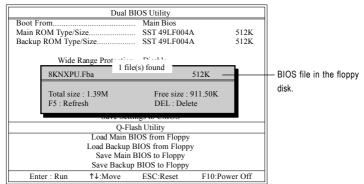
If you want to save the current BIOS for backup purpose, you can begin Step 1 with "Save Main BIOS to Floppy" item.

2. Move to the BIOS file you want to flash and press Enter.

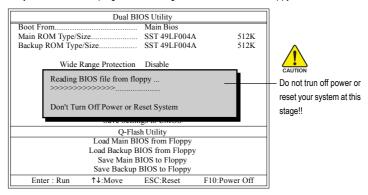
In this example, we only download one BIOS file to the floppy disk so only one BIOS file, 8KNXPU.Fba, is listed.



Please confirm again you have the correct BIOS file for your motherboard.



After pressing **Enter**, you'll then see the progress of reading the BIOS file from the floppy disk.



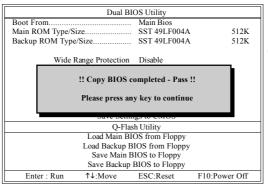
After BIOS file is read, you'll see a confirmation dialog box asking you "Are you sure to update BIOS?"

3. Press Y button on your keyboard after you are sure to update BIOS.

Then it will begin to update BIOS. The progress of updating BIOS will be displayed.

Please do not take out the floppy disk when it begins flashing BIOS.

4. Press any keys to return to the Q-Flash menu when the BIOS updating procedure is completed.



NOTE You can repeat Step 1 to 4 to flash the backup

4 to flash the backup BIOS, too.

 Press Esc and then Y button to exit the Q-Flash utility. The computer will restart automatically after you exit Q-Flash.

Dual BIOS Utility				
Boot From Main Bios				
Main ROM Type/S	ize	SST 49LF004A	512K	
Backup ROM Type/Size		SST 49LF004A	512K	
Wide	Range Protection	Disable		
Are you sure to RESET ? [Enter] to continure or [Esc] to abort				
Q-Flash Utility				
Load Main BIOS from Floppy				
Load Backup BIOS from Floppy				
Save Main BIOS to Floppy				
Save Backup BIOS to Floppy				
Enter : Run	1↓:Move	ESC:Reset	F10:Power Off	

After system reboots, you may find the BIOS version on your boot screen becomes the one you flashed.

	Award Modular BIOS v6.00PG, An Energy Star Ally Copyright (C) 1984-2003, Award Software, Inc.
The BIOS file	Intel 1875P AGPset BIOS for 8KNXP Ultra Fba Check System Health OK, Vore= 1 5250
becomes Fba after updating.	Check System Fream OS, VCSCE 1 2020 Main Processor: Intel Pentium (R) 4 1.16GHz (133x12) <cpuid 0027="" 0f27="" :="" id="" patch=""> Memory Testing : 131072K OK</cpuid>
	Memory Frequency 266 MHz in Single Channel Primary Master : FUJITSU MPE3170AT ED-03-08 Primary Slave : None Secondary Master : CREATIVEDVD-RM DVD1242E BC101 Secondary Slave : None
	Press DEL to enter SETUP / Dual BIOS / Q-Flash / F9 For Xpress Recovery 09/23/2003-i875P-6A79BG03C-00

6. Press Del to enter BIOS menu after system reboots. When you are in BIOS menu, move to Load Fail-Safe Defaults item and press Enter to load BIOS Fail-Safe Defaults. Normally the system redetects all devices after BIOS has been upgraded. Therefore, we highly recommend reloading the BIOS defaults after BIOS has been upgraded.

CMOS Setup Utility-Copyright (C) 1984-2004 Award Software		
Standard CMOS Features Advanced BIOS Features Integrated Perinharate Power Mana: Load Fail-Safe Def	Select Language Load Fail-Safe Defaults Load Optimized Defaults	
 Power Mana; PnP/PCI Cor PC Health Status MB Intelligent Tweaker(M.I.T.) 	aults (Y/N)? Y Save & Exit Setup Exit Without Saving	
ESC: Quit	F3: Change Language	
F8: Dual BIOS/Q-Flash	F10: Save & Exit Setup	
Time, Date, Hard Disk Type		

Press Y on your keyboard to load defaults.

 Select Save & Exit Setup item to save the settings to CMOS and exit the BIOS menu. System will reboot after you exit the BIOS menu. The procedure is completed.

CMOS Setup Utility-Copyright (C) 1984-2004 Award Software			
Standard CMOS Features	Select Language		
 Advanced BIOS Features 	Load Fail-Safe Defaults		
Integrated Perinharale	Load Ontimized Defaulte		
Power Mana; Save to CMOS and	EXIT (Y/N)? Y		
▶ PnP/PCI Cor			
 PC Health Status 	Save & Exit Setup		
MB Intelligent Tweaker(M.I.T.)	Exit Without Saving		
ESC: Quit	F3: Change Language		
F8: Dual BIOS/Q-Flash	F10: Save & Exit Setup		
Time, Date, Hard Disk Type			

Press Y on your keyboard to save and exit.

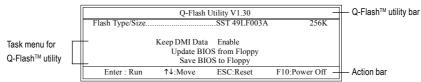
Part Two:

Updating BIOS with Q-Flash[™] Utility on Single-BIOS Motherboards.

This part guides users of single-BIOS motherboards how to update BIOS using the Q-Flash™ utility.

CMOS Setup Utility-Copyright (C) 1984-2004 Award Software		
 Standard CMOS Features 	Top Performance	
 Advanced BIOS Features 	Load Fail-Safe Defaults	
 Integrated Peripherals 	Load Optimized Defaults	
 Power Management Setup 	Set Supervisor Password	
PnP/PCI Configurations	Set User Password	
 PC Health Status 	Save & Exit Setup	
▶ MB Intelligent Tweaker(M.I.T.)	Exit Without Saving	
F3: Change Language		
F8: Q-Flash	F10: Save & Exit Setup	
Time, Date, Hard Disk Type		

Exploring the Q-Flash[™] utility screen



The Q-FlashBIOS utility screen consists of the following key components.

Task menu for Q-Flash utility:

Contains the names of three tasks. Blocking a task and pressing Enter key on your keyboard to enable execution of the task.

Action bar:

Contains the names of four actions needed to operate the Q-Flash utility. Pressing the buttons mentioned on your keyboards to perform these actions.

Using the Q-Flash[™] utility:

This section tells you how to update BIOS using the Q-Flash utility. As described in the "Before you begin" section above, you must prepare a floppy disk having the BIOS file for your motherboard and insert it to your computer. If you have already put the floppy disk into your system and have entered the Q-Flash utility, please follow the steps below to flash BIOS.

Steps:

1. Press arrow buttons on your keyboard to move the light bar to "Update BIOS from Floppy" item in the Q-Flash menu and press Enter button.

Later, you will see a box pop up showing the BIOS files you previously downloaded to the floppy disk.

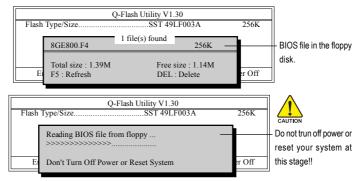


If you want to save the current BIOS for backup purpose, you can begin Step 1 with "Save BIOS to Floppy" item.

2. Move to the BIOS file you want to flash and press Enter.

In this example, we only download one BIOS file to the floppy disk so only one BIOS file, 8GE800.F4, is listed.

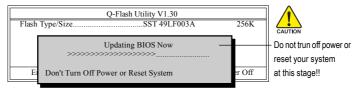
Please confirm again you have the correct BIOS file for your motherboard.



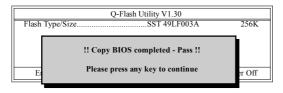
After BIOS file is read, you'll see a confirmation dialog box asking you "Are you sure to update BIOS?"

Please do not take out the floppy disk when it begins flashing BIOS.

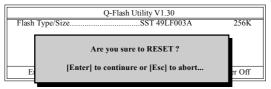
3. Press Y button on your keyboard after you are sure to update BIOS. Then it will begin to update BIOS. The progress of updating BIOS will be shown at the same time.



4. Press any keys to return to the Q-Flash menu when the BIOS updating procedure is completed.



5. Press Esc and then Y button to exit the Q-Flash utility. The computer will restart automatically after you exit Q-Flash.



After system reboots, you may find the BIOS version on your boot screen becomes the one you flashed.



6. Press Del to enter BIOS menu after system reboots and "Load BIOS Fail-Safe Defaults". See how to Load BIOS Fail-Safe Defaults, please kindly refer to Step 6 to 7 in Part One.

Congratulation!! You have updated BIOS successfully!!

updating



Method 2 : @BIOS™ Utility

If you do not have a DOS startup disk, we recommend that you use the new @BIOS utility. @BIOS allows users to update their BIOS under Windows. Just select the desired @BIOS server to download the latest version of BIOS.

Fig 1. Installing the @BIOS utility



Fig 3. The @BIOS utility



1. Methods and steps:

- I. Update BIOS through Internet
 - a. Click "Internet Update" icon
 - b. Click "Update New BIOS" icon
 - c. Select @BIOS™ sever
 - d. Select the exact model name on your motherboard
 - e. System will automatically download and update the BIOS.
- II. Update BIOS NOT through Internet:
 - a. Do not click "Internet Update" icon
 - b. Click "Update New BIOS"
 - c. Please select "All Files" in dialog box while opening the old file.
 - Please search for BIOS unzip file, downloading from internet or any other methods (such as: 8I955XRO.F1).
 - e. Complete update process following the instruction.

Fig 2. Installation complete and run @BIOS



Fig 4. Select the desired @BIOS server



III. Save BIOS

In the very beginning, there is "Save Current BIOS" icon shown in dialog box. It means to save the current BIOS version.

IV. Check out supported motherboard and Flash ROM:

In the very beginning, there is "About this program" icon shown in dialog box. It can help you check out which kind of motherboard and which brand of Flash ROM are supported.

2. Note:

- In method I, if it shows two or more motherboard's model names to be selected, please make sure your motherboard's model name again. Selecting wrong model name will cause the system unbooted.
- II. In method II, be sure that motherboard's model name in BIOS unzip file are the same as your motherboard's. Otherwise, your system won't boot.
- III. In method I, if the BIOS file you need cannot be found in @BIOS[™] server, please go onto Gigabyte's web site for downloading and updating it according to method II.
- IV. Please note that any interruption during updating will cause system unbooted

4-1-4 Serial ATA BIOS Setting Utility Introduction

RAID Levels

RAID (Redundant Array of Independent Disks) is a method of combining two hard disk drives into one logical unit. The advantage of an Array is to provide better performance or data fault tolerance. Fault tolerance is achieved through data redundant operation, where if one drives fails, a mirrored copy of the data can be found on another drive. This can prevent data loss if the operating system fails or hangs. The individual disk drives in an array are called members. The configuration information of each member is recorded in the reserved sector that identifies the drive as a member. All disk members in a formed disk array are recognized as a single physical drive to the operating system.

Hard disk drives can be combined together through a few different methods. The different methods are referred to as different RAID levels. Different RAID levels represent different performance levels, security levels and implementation costs. The RAID levels which the Intel[®] ICH7R chipset supports are RAID 0, RAID 1, RAID 0+1, and RAID 5.

RAID 0 (Striping)

RAID 0 reads and writes sectors of data interleaved between multiple drives. If any disk member fails, it affects the entire array. The disk array data capacity is equal to the number of drive members times the capacity of the smallest member. The Intel RAID striping block size can be set from 4KB to 64KB. RAID 0 does not support fault tolerance.

RAID 1 (Mirroring)

RAID 1 writes duplicate data onto a pair of drives and reads both sets of data in parallel. If one of the mirrored drives suffers a mechanical failure or does not respond, the remaining drive will continue to function. Due to redundancy, the drive capacity of the array is the capacity of the smallest drive. Under a RAID 1 setup, an extra drive called the spare drive can be attached. Such a drive will be activated to replace a failed drive that is part of a mirrored array. Due to the fault tolerance, if any RAID 1 drive fails, data access will not be affected as long as there are other working drives in the array.

RAID 0+1 (Striping + Mirroring)

RAID 0+1 combines the performance of data striping (RAID 0) and the fault tolerance of disk mirroring (RAID 1). Data is striped across multiple drives and duplicated on another set of drives.

RAID 5 (Striping with Parity)

RAID 5 provides good fault tolerance and allows for overlapped I/O operations. Under a RAID 5 setup, data and parity information are equally distributed to each disk member in the array. If any one of the drives fails, the remaining drive will continue to function. After replacing the failed drive, you can rebuild the data from the remaining data and parity. Only one drive can be safely crash without any data loss.

Please follow the steps below to construct a complete RAID array:

- 1) Have ready your hard drives for RAID construction.
 - Note: To achieve best performance, it is recommended that the hard drives used are of similar make and storage capacity.
- Please attach the hard drive connectors to their appropriate location on the motherboard ie. IDE, SCSI, or SATA.
- 3) Enter the motherboard BIOS and locate RAID setup (Please refer to the section on Integrated Peripherals).
- Enter RAID setup in the BIOS and select the RAID type (For instance, enter Ctrl + I to select Intel RAID; Ctrl + S to select Silicon Image).
- 5) Complete driver installation.
- 6) Complete RAID utility installation.

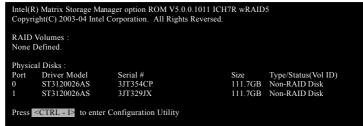
More information on steps 4 and 5 is provided. (For more detailed setup information, please visit "Support\ Motherboard\ Technology Guide section" on our website at http:\\www.gigabyte.com.tw to read or download the information you need.) Sections below introduce the steps to configure Intel and Promise RAID BIOS

A. Configuring the Intel RAID BIOS

The Intel RAID BIOS setup lets you choose the RAID array type and which hard drives you want to make part of the array.

Entering the RAID BIOS Setup

1. After rebooting your computer, wait until you see the RAID software prompting you to press Ctrl + I. The RAID prompt appears as part of the system POST and boot process prior to loading the OS. You have a few seconds to press Ctrl + I before the window disappears.





Intel(R) Matrix Storage Manager option ROM V5.0.0.1011 ICH7R wRAID5 Copyright(C) 2003-04 Intel Corporation. All Rights Reversed.					
	[MAIN MENU]				
	1. Create RAID Volume 2. Delete RAID Volume				
	3 Reset Disks to Non-RAID				
	4. Exit				
[]					
11	RAID Volumes :				
None	None Defined.				
Physic	al Disks :				
Port	Driver Model	Serial #	Size	Type/Status(Vol ID)	
0	ST3120026AS	3JT329JX		Non-RAID Disk	
	ST3120026AS	3JT354CP	111.7GB	Non-RAID Disk	
	[↑↓]-Select	[ESC]-E	xit	[ENTER]-Select Menu	

Create RAID Volume

Intel(R) Matrix Storage Manager option ROM V5.0.0.1011 ICH7R wRAID5 Copyright(C) 2003-04 Intel Corporation. All Rights Reversed.			
RAID Le D Strip	me : RAID vel : RAID sks : Select ize : 128KB ity : 223.5 (Disks	
Create Volume [HELP] Enter a string between 1 and 16 characters in length that can be used to uniquely identify the RAID volume. This name is case sensitive and can not contain special characters.			
[↑↓]-Change [TA]]-Next	[ESC]-Previous Menu	[ENTER]-Select

Press Enter under Create RAID Volume to set up RAID.

After entering the Create Volume Menu, you can set disk name with 1~16 letters (letters cannot be special characters) under **Name** item.

After setting disk name, press Enter to select RAID Level.

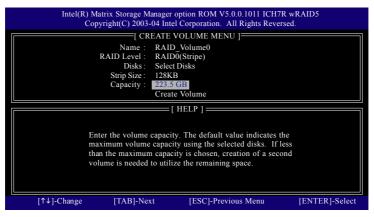
Intel(R) Matrix Storage Manager option ROM V5.0.0.1011 ICH7R wRAID5 Copyright(C) 2003-04 Intel Corporation. All Rights Reversed.			
[CREATE VOLUME MENU]			
Name : RAID Volume0			
RAID Level : RAID0(Stripe)			
Disks : Select Disks			
Strip Size : 128KB			
Capacity : 223.5 GB			
Create Volume			
[HELP]			
Choose the RAID level best suited to your usage model.			
RAID0- Data striped across multiple physical drives for performance.			
RAID1- Data mirrored across multiple physical drives for redundancy.			
RAID0+1- Striped volume whose segments are RAID 1 volumes. Requires			
four hard drives. Functionally equivalent to RAID 0+1.			
RAID5- Data and parity striped across three or more physical drives			
for performance and redundancy.			
[↑↓]-Change [TAB]-Next [ESC]-Previous Menu [ENTER]-Select			

There are four RAID levels: RAID0(Stripe), RAID1(Mirror), RAID 0+1 (Striping + Mirroring) and RAID5. After selecting the RAID level, press **Enter** to select **Strip Size**.

The KB is a unit of Strip Size. You can set disk block size with this item.

The disk block size can be set from 4KB to 128KB. After you set disk block size, press **Enter** to set disk **Capacity**.

Intel(R) Matrix Storage Manager option ROM V5.0.0.1011 ICH7R wRAID5 Copyright(C) 2003-04 Intel Corporation. All Rights Reversed.		
CREATE VOLUME MENU]		
Name :	RAID Volume0	
RAID Level :		
Disks :	Select Disks	
Strip Size :	128KB	
Capacity :		
	Create Volume	
	[HELP]	
The	following are typical values:	
	RAID 0 - 128KB	
	RAID 1 - 64KB	
RAID 5 - 64KB		
[↑↓]-Change [TAB]-Nex	ESC]-Previous Menu [ENTER]-Select	



Press Enter to enter Create Volume after setting disk capacity.

Press Enter under the Create Volume item.

		r option ROM V5.0.0.1011 ICH7R tel Corporation. All Rights Revers	
	[CREATE	VOLUME MENU]	
	Name : RAI RAID Level : RAI Disks : Sele Strip Size : 1281 Capacity : 223.	DŌ(Stripe) ct Disks KB	
		[HELP]	
[↑↓]-Change	[TAB]-Next	[ESC]-Previous Menu	[ENTER]-Select

An alert bar will be displayed warning you that all data on selected disks will be lost. Please press **Y** to complete the set-up of RAID.



English

After the completion, you will see the detailed information about the RAID, such as RAID level, disk block size, disk name and disk capacity, etc.

Intel(R) Matrix Storage Manager option ROM V5.0.0.1011 ICH7R wRAID5 Copyright(C) 2003-04 Intel Corporation. All Rights Reversed.						
[MAIN MENU] 1. Create RAID Volume 2. Delete RAID Volume 3. Reset Disks to Non-RAID 4. Exit						
		=[DISK/VOLUM	E INFORMA	TION]		
RAID	Volumes :					
ID	Name	Leve	1	Strip	Size	Status
Bootab	ole					
0	RAID_Volume0	RAID(Stripe)	128KB	223.5GB	Normal	Yes
Physic Port 0 1	al Disks : Driver Model ST3120026AS ST3120026AS	Serial # 3JT329JX 3JT354CP		Size 111.7GB 111.7GB	÷1	
[↑↓]-Select [ESC]-Exit [ENTER]-Select Menu						

Delete RAID Volume

If you want to delete a RAID volume, please select the **Delete RAID Volume** option. Press **Enter** key and follow the instructions on the screen.

	Intel(R) Matrix Storage Manager option ROM V5.0.0.1011 ICH7R wRAID5 Copyright(C) 2003-04 Intel Corporation. All Rights Reversed.					
		[MAIN	i menu] =			1
		1. Create R.	AID Volume			
		2. Delete R.	AID Volume			
		3. Reset Dis	ks to Non-RA	AID		
		4. Exit				
			E INIEODMA	TION 1		
		=[DISK/VOLUM	E INFORMA	110N J=		
	Volumes :					_
ID	Name	Level		Strip	Size	Status
Bootab						
0	RAID_Volume0	RAID(Stripe)	128KB	223.5GB	Normal	Yes
Physic	al Disks :					
Port	Port Driver Model Serial # Size Type/Status(Vol ID)				us(Vol ID)	
0	ST3120026AS	3JT329JX		111.7GB	Member	Disk(0)
1	ST3120026AS	3JT354CP		111.7GB	Member	Disk(0)
[↑↓]-Select [ESC]-Exit [ENTER]-Select Menu						

Installing the RAID drivers

To install operating system onto a serial ATA hard disk successfully, you need to install the SATA controller driver during OS installation. Without the driver, the hard disk may not be recognized during the Windows setup process. First of all, copy the driver for the SATA controller from the motherboard driver CD-ROM to a floppy disk. See the instructions below about how to copy the driver in MS-DOS mode^(Note1). Prepare a startup disk that has CD-ROM support and a blank formatted floppy disk.

Step 1: Insert the prepared startup disk and motherboard driver CD-ROM in your system. Boot from the startup disk. Once at the A:\> prompt, change to the CD-ROM drive (example: D:\>). At the D:\> prompt, type the following two commands. Press ENTER after each command (Fig.1):

```
cd bootdrv
menu
```

Step 2: When the controller menu (Fig.2) appears, remove the startup disk and insert the blank formatted disk. Select the controller driver by pressing the corresponding letter from the menu. Your system will then automatically zip and transfer this driver file to the floppy disk. Press 0 to exit when finished.



13CloaMAID 23833114 BASE Driver 33833114 BASE Driver 539733114 BASE Driver 639709 SAIA BAID Driver 639709 SAIA BAID Driver 731ntel Matrix Storage Manager 64 79833132 BASE Driver 839826 Driver 839826 Driver 809841	2 bit (Nome 2) i bit



Step 3: After completing the steps, boot from the Windows installation disk to install the RAID drivers. Press **F6** as soon as you see the "Press F6 if you need to install a third party SCSI or RAID driver" message, then supply serial ATA controller driver by this floppy disk. Follow the on-screen instructions to complete the installation.

(Each time you add a new hard drive to a RAID array, the RAID driver will have to be installed under Windows once for that hard drive. After that, the driver will not have to be installed.)



(Note 1): For users without a startup disk.

Use an alternative system and insert the GIGABYTE motherboard drive CD-ROM. From the CD-ROM drive (example: D:\) double click the **MENU.exe** file in the **BootDrv** folder. A command prompt window will open similar to that in Fig. 2.

(Note 2):In the menu list, Intel Matrix Storage Manager is Intel ICH7R chipset.



4-1-5 Introduction of Designed for Dolby[®] Master Studio[™] [©]

Motherboards that feature the Designed for Dolby Master Studio deliver the ultimate Dolby audio presentation capabilities.

The Designed for Dolby[®] Master Studio[™] logo helps consumers identify motherboards that have been developed and tested to meet Dolby Laboratories' rigorous audio

specifications, ensuring they can deliver the highest-quality Dolby audio entertainment experience, rivaling entertainment experiences from advanced consumer electronics.

Technologies Provided with Designed for Dolby Master Studio Motherboards:

- Dolby Digital EX
- Dolby Digital Live
- Dolby Pro Logic IIx
- Dolby Headphone
- Dolby Virtual Speaker

Designed for Dolby[®] Master Studio[™] at Glance

- Dolby 7.1-Channel Surround Sound

Delivers the ultimate set of Dolby audio presentation capabilities, with support for up to 7.1 channels of surround sound.

- 100 Percent Compatibility

Compatible with your favorite playback applications, including Windows Media® Player, iTunes®, Musicmatch®, DVD players, streaming media players, personal video recorder (PVR)/TV tuners, and personal media libraries.

- Integration

Designed for Dolby Master Studio motherboards are built to Dolby Laboratories' audio connectivity specifications, making them ready for seamless integration with home theater sound systems.

- Technologies Work Seamlessly Together

Dolby Headphone and Dolby Virtual Speaker were engineered to work in concert with Dolby Digital and Dolby Pro Logic IIx. This way, you can access the full potential of your entire library of music, games, movies, and more.

- Unified Audio Controls

Audio controls for all Dolby premier technologies are now centralized in one user interface.

Technology Comparison:

The chart below compares the two Dolby PC Entertainment Experience "Designed for" technology bundles by their ingredient technologies.

Technology Comparison	Designed for Dolby [®] Home Theater™	Designed for Dolby [®] Master Studio™
Delivered in Codec Driver		
Digital Audio for Play back	Dolby Digital Live	Dolby Digital EX*
		Dolby Digital Live
Surround Sound Expansion	Dolby Pro Logic II	Dolby Pro Logic IIx
Vitual Surround Sound	Dolby Headphone	Dolby Headphone
	Dolby Virtual Speaker	Dolby Virtual Speaker

* Dolby Digital EX support provided via Dolby Pro Logic IIx

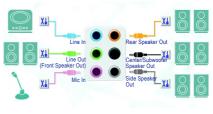
① Only for GA-8I955X Royal.



4-1-6 2- / 4- / 6- / 8- Channel Audio Function

This motherboard provides 6 audio connector. You are able to use 2-/4-/6-/8-channnels audio feature by audio software selection.

The default speaker settings for the 6 audio jacks are as shown in the picture to the right. The jack retasking capability supported by HD Audio allows users to change the function for each audio jack by the audio software provided. For example, if a rear speaker is plugged into the center/subwoofer speaker out jack, you can change the center/ subwoofer speaker out jack to fucntion as a rear speaker out jack via the audio software.Please follow the steps to install the function. (Following pictures are in Windows XP)



Note that if you wish to connect a microphone, you MUST connect it to the default Mic In jack for the microphone to work correctly.

HD Audio

With multiple built-in high quality digital-to-analog converters (DACs) that support audio output at up to 192 kHz/24-bit quality and multi-streaming applications, HD Audio is able to handle multiple audio streams (in and out) simultaneously. Multi-channel audio experiences have become a reality so you can, for instance, listen to MP3 music, have an Internet chat, make a telephone call over the Internet, and etc. all at the same time.

Stereo Speakers Connection and Settings:

We recommend that you use the speaker with amplifier to acquire the best sound effect if the stereo output is applied.

STEP 1 :

After installation of the audio driver, you should find an Audio Manager i icon in your system tray (you can also find the icon in Control Panel). Doubleclick the icon to open the Audio Control Panel.





STEP 2:

In the Audio Control Panel, click the **Audio I/O** tab. In the upper left list, click **2CH Speaker**.



STEP 3:

After a speaker or headphone is plugged into the rear Line Out jack, a small window will pop up and ask you what type of equipment is connected. Choose **Headphone** or **Line Out** depending on the device connected and click **OK**. The 2-channel audio setup is completed.

	abyte aphone 3D Audio Demo	00
Connected device : Which device did you plug in? Line In Hesion He		- 88 - 88 - 88
OK Cancel	el DIGITAL	ی مد مد
		ОК

4 Channel Audio Setup

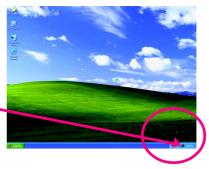
STEP 1:

After installation of the audio driver, you should find an Audio Manager icon in your system tray (you can also find the icon in Control Panel). Doubleclick the icon to open the Audio Control Panel.





In the Audio Control Panel, click the **Audio I/O** tab. In the upper left list, click **4CH Speaker**.





English

STEP 3:

After plugging in 4-channel speakers to the rear speaker jacks, a small window will pop up and ask you what type of equipment is connected. Choose a device depending on the type of speaker connected (4-channel audio consists of Front Speaker Out (Line Out) and Rear Speaker Out) and then click **OK**. The 4-channel audio setup is completed.

GIGABY	(TE:	03
Sound Effect Mixer Audio VO Micropho	one 3D Audio Demo	
Connected device :		
Which device did you plug in?		ଆହା
Line In Mic In		2 12 5161
Headphone ✓ Line Out Rear Speaker Out		
Center/Subwoofer Speaker Dut Side Speaker Out	• • • • • · · · · · · · · · · · · · ·	<u>jo</u>
	iel DIGITAL	
	(л. I
OK Concel		
	-+hu	∽₊∥
🙃 en		ок 🔾

6 Channel Audio Setup

STEP 1 :

After installation of the audio driver, you should find an Audio Manager icon in your system tray (you can also find the icon in Control Panel). Doubleclick the icon to open the Audio Control Panel.



STEP 2:

In the Audio Control Panel, click the **Audio I/O** tab. In the upper left list, click **6CH Speaker**.





STEP 3:

After plugging in 6-channel speakers to the rear speaker jacks, a small window will pop up and ask you what type of equipment is connected. Choose a device depending on the type of speaker connected (6-channel audio consists of Front Speaker Out (Line Out), Rear Speaker Out, and Center/Subwoofer Speaker Out) then click **OK**. The 6-channel audio setup is completed.

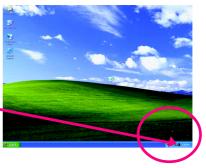


8 Channel Audio Setup

STEP 1 :

After installation of the audio driver, you should find an Audio Manager icon in your system tray (you can also find the icon in Control Panel). Doubleclick the icon to open the Audio Control Panel.





STEP 2:

In the Audio Control Panel, click the **Audio I/O** tab. In the upper left list, click **8CH Speaker**.



STEP 3:

After plugging in 8-channel speakers to the rear speaker jacks, a small window will pop up and ask you what type of equipment is connected. Choose a device depending on the type of speaker connected (8-channel audio consists of Front Speaker Out (Line Out), Rear Speaker Out, Center/Subwoofer Speaker Out, and Side Speaker Out) then click **OK**. The 8-channel audio setup is completed.

	Crophone 3D Audio	Demo	00
Connected device : Which device did you plug in? I ce In Mic In Pressione Pressione Center Subwork Speaker Dut Center Subwork Speaker Dut Center Subwork Speaker Dut	3 1nel 	®	
OK Cancel	inel 	DIGITAL مبکر ده مکرد	3) 1-

Sound Effect Configuration:

At the **Sound Effect** menu, users can adjust sound option settings as desired.



AC'97 Audio Configuration:

To enable the front panel audio connector to support AC97 Audio mode, go to the Audio Control Panel and click the Audio I/O tab. In the ANA-LOG area, click the Tool icon and then select the Disable front panel jack detection check box. This action completes the AC'97 Audio configuration.



GIGABYTE Sound Effect Mixer Audio VO Microphone 3D Audio D	
201 Speaker Herspeaker 101 Speaker 101 Sp	СК.

4-2 Troubleshooting

Below is a collection of general asked questions. To check general asked questions based on a specific motherboard model, please log on to www.gigabyte.com.tw

Question 1: I cannot see some options that were included in previous BIOS after updating BIOS. Why? Answer: Some advanced options are hidden in new BIOS version. Please press Ctrl and F1 keys after entering BIOS menu and you will be able to see these options.

Questions 2: Why is the light of my keyboard/optical mouse still on after computer shuts down? Answer: In some boards, a small amount of electricity is kept on standby after computer shuts down and that's why the light is still on.

Question 3: How do I clear CMOS?

Answer: If your board has a Clear CMOS jumper, please refer to the Clear CMOS steps in the manual. If your board doesn't have such jumper, you can take off the on-board battery to leak voltage to clear CMOS. Please refer to the steps below:

Steps:

- 1. Turn off power.
- 2. Disconnect the power cord from MB.
- Take out the battery gently and put it aside for about 10 minutes (Or you can use a metal object to connect the positive and negative pins in the battery holder to makethem short for one minute).
- 4. Re-insert the battery to the battery holder.
- 5. Connect power cord to MB again and turn on power.
- 6. Press Del to enter BIOS and load Fail-Safe Defaults(or load Optimized Defaults).
- 7. Save changes and reboot the system.

Question 4: Why do I still get a weak sound after turning up the speaker to the maximum volume? Answer: Please make sure the speaker you are using is equipped with an internal amplifier. If not, please change another speaker with power/amplifier and try again later.

Question 5: Sometimes I hear different continuous beeps from computer after system boots up. What do these beeps usually stand for?

Answer: The beep codes below may help you identify the possible computer problems. However, they are only for reference purposes. The situations might differ from case to case.

\rightarrow AMI BIOS Beep Codes \rightarrow	AWARD BIOS Beep Codes
 → AMI BIOS Beep Codes → *Computer gives 1 short beep when system boots successfully. *Except for beep code 8, these codes are always fatal. 1 beep Refresh failure 2 beeps Parity error 3 beeps Base 64K memory failure 4 beeps Timer not operational 5 beeps Processor error 6 beeps 8042 - gate A20 failure 7 beeps Processor exception interrupt error 8 beeps Display memory read/write failure 9 beeps ROM checksum error 10 beeps CMOS shutdown register read/write error 	AWARD BIOS Beep Codes 1 short: System boots successfully 2 short: CMOS setting error 1 long 1 short: DRAM or M/B error 1 long 2 short: Monitor or display card error 1 long 3 short: Keyboard error 1 long 9 short: BIOS ROM error Continuous long beeps: DRAM error Continuous short beeps: Power error

-ngilsn

11 beeps Cache memory bad

- 83 -	Appendix



Taiwan (Headquarters)

GIGA-BYTE TECHNOLOGY CO., LTD.

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FAX: +886-2-8912-4003

Tech. Support :

http://tw.giga-byte.com/TechSupport/ServiceCenter.htm

Non-Tech. Support(Sales/Marketing):

http://ggts.gigabyte.com.tw/nontech.asp

WEB address (English): http://www.gigabyte.com.tw WEB address (Chinese): http://chinese.giga-byte.com

U.S.A.

G.B.T. INC. TEL:+1-626-854-9338 FAX:+1-626-854-9339 Tech. Support : http://tw.giga-byte.com/TechSupport/ServiceCenter.htm Non-Tech. Support(Sales/Marketing) : http://ggts.gigabyte.com.tw/nontech.asp WEB address : http://www.giga-byte.com • Germany

G.B.T. TECHNOLOGY TRADING GMBH TEL: +49-40-2533040 (Sales) +49-1803-428468 (Tech.) FAX: +49-40-25492343 (Sales) +49-1803-428329 (Tech.) Tech. Support :

http://tw.giga-byte.com/TechSupport/ServiceCenter.htm Non-Tech. Support(Sales/Marketing): http://gqts.gigabyte.com.tw/nontech.asp

WEB address : http://www.gigabyte.de

Japan

NIPPON GIGA-BYTE CORPORATION WEB address : http://www.gigabyte.co.jp

Singapore

GIGA-BYTE SINGAPORE PTE. LTD. Tech. Support :

http://tw.giga-byte.com/TechSupport/ServiceCenter.htm Non-Tech. Support(Sales/Marketing) : http://gqts.gigabyte.com.tw/nontech.asp

WEB address: http://www.gigabyte.com.sg

U.K.

G.B.T. TECH. CO., LTD. TEL +44-1908-362700 FAX: +44-1908-362709 Tech. Support : http://tw.giga-byte.com/TechSupport/ServiceCenter.htm Non-Tech. Support(Sales/Marketing): http://ggts.gigabyte.com.tw/nontech.asp WEB address : http://uk.giga-byte.com The Netherlands GIGA-BYTE TECHNOLOGY B.V. TEL:+31-40-290-2088 NLTech.Support: 0900-GIGABYTE (0900-44422983) BE Tech.Support: 0900-84034 FAX: +31-40-290-2089 Tech. Support : http://tw.giga-byte.com/TechSupport/ServiceCenter.htm Non-Tech. Support(Sales/Marketing): http://ggts.gigabyte.com.tw/nontech.asp WEB address : http://www.giga-byte.nl

China . NINGBO G.B.T. TECH. TRADING CO., LTD. Tech. Support : http://tw.giga-byte.com/TechSupport/ServiceCenter.htm Non-Tech. Support(Sales/Marketing): http://ggts.gigabyte.com.tw/nontech.asp WEB address : http://www.gigabyte.com.cn Shanghai TEL:+86-021-63410999 FAX: +86-021-63410100 Beijing TEL:+86-10-62102838 FAX: +86-10-62102848 Wuhan TEL:+86-27-87851061 FAX: +86-27-87851330 GuangZhou TEL:+86-20-87586074 FAX: +86-20-85517843 Chenadu TEL:+86-28-85236930 FAX:+86-28-85256822 Xian TEL:+86-29-85531943 FAX: +86-29-85539821 Shenvang TEL:+86-24-23960918 FAX +86-24-23960918-809 Australia GIGABYTE TECHNOLOGY PTY. LTD. Tech. Support : http://tw.giga-byte.com/TechSupport/ServiceCenter.htm Non-Tech. Support(Sales/Marketing): http://ggts.gigabyte.com.tw/nontech.asp

WEB address : http://www.giga-byte.com.au

• France

GIGABYTE TECHNOLOGY FRANCE S.A.R.L. Tech. Support : http://tw.giga-byte.com/TechSupport/ServiceCenter.htm Non-Tech. Support(Sales/Marketing) : http://ggts.gigabyte.com.tw/nontech.asp WEB address : http://www.gigabyte.fr

Russia

Moscow Representative Office Of GIGA-BYTE Technology Co., Ltd. Tech. Support : http://tw.giga-byte.com/TechSupport/ServiceCenter.htm

Non-Tech. Support(Sales/Marketing):

http://ggts.gigabyte.com.tw/nontech.asp WEB address : http://www.gigabyte.ru

Poland

Office of GIGA-BYTE TECHNOLOGY Co., Ltd. in POLAND Tech. Support : http://tw.giga-byte.com/TechSupport/ServiceCenter.htm Non-Tech. Support(Sales/Marketing) :

http://ggts.gigabyte.com.tw/nontech.asp

WEB address : http://www.gigabyte.pl

Serbia & Montenegro

Representative Office Of GIGA-BYTE Technology Co., Ltd. in SERBIA & MONTENEGRO

Tech. Support :

http://tw.giga-byte.com/TechSupport/ServiceCenter.htm

Non-Tech. Support(Sales/Marketing):

http://ggts.gigabyte.com.tw/nontech.asp

WEB address: http://www.gigabyte.co.yu

Czech Republic

Representative Office Of GIGA-BYTE Technology Co., Ltd. in CZECH REPUBLIC Tech. Support :

http://tw.giga-byte.com/TechSupport/ServiceCenter.htm Non-Tech. Support(Sales/Marketing):

http://ggts.gigabyte.com.tw/nontech.asp

WEB address: http://www.gigabyte.cz

Romania

Representative Office Of GIGA-BYTE Technology Co., Ltd. in Romania

Tech. Support :

http://tw.giga-byte.com/TechSupport/ServiceCenter.htm

Non-Tech. Support(Sales/Marketing):

http://ggts.gigabyte.com.tw/nontech.asp

WEB address: http://www.gigabyte.com.ro